

DESCRIPTIVE CATALOGUE
OF
INDIAN PRODUCE

EXHIBITED TO
THE AMSTERDAM EXHIBITION,
1883.

BY
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OFFICER IN CHARGE OF INDIAN EXHIBITS FOR THE AMSTERDAM EXHIBITION.

CALCUTTA:
PRINTED BY THE SUPERINTENDENT OF GOVERNMENT PRINTING, INDIA,
1883.

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PREFACE.

THE want of a complete list of Indian Products, was very much felt when the duty of collecting samples for the Amsterdam Exhibition was entrusted to me last year. I therefore commenced to draw up a list of Indian Economic Products, with a short description of the source from which each article is derived, the place where chiefly found, and the uses to which it is put; but I soon found that this work would take more time than I had at my disposal.

The present Catalogue contains particulars only of the samples sent to Amsterdam. In describing a plant, I have tried to mention all the uses to which its different parts are put, but it was not always possible to procure samples of each of the products, and I am therefore conscious that my Amsterdam Collection is by no means complete. A detailed list of what has been sent to Amsterdam is given in the "Classified List"—a separate publication.

I take this opportunity to acknowledge my obligation to Dr. George Watt, who kindly consented to correct the final proof sheets of this work, and thereby many inaccuracies in botanical terminology have been obviated. But I must here add that Dr. Watt did not see the specimens.

My acknowledgment to authors whose works I consulted is recorded in the next page.

T. N. M.

RAHUTA, 7th May 1883.

ACKNOWLEDGMENT.

In drawing up this descriptive Catalogue, I have largely consulted the following Authors :—

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- Drury.**—Useful Plants of India : Madras, 1858; reprint, 1882.
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CONTRIBUTED TO THE

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Abelmoschus esculentus. *See* Hibiscus esculentus

Abelmoschus moschatus. *See* Hibiscus Abelmoschus

Abies Smithiana. *Himalayan Spruce.*

Vern.—Hindi, Rao, &c.

A lofty tree, native of the Himalayas and the mountains of Afghanistan. A specimen of the wood of this tree has been contributed by the Forest Timber Department. The timber makes beautiful lathes, but easily splits, and is therefore not valued. The tree is also mentioned as a resin-bearing Conifer.

Abies Webbiana. *Himalayan Silver Fir.*

Vern.—Hindi, Wuman, &c.

A lofty evergreen timber tree, native of the Himalayas. A specimen Timber of the wood has been contributed by the Forest Department. It is chiefly used for shingles, but is not very durable. In some places the bark is used for roofing shepherds' huts, and the twigs and leaves stored for use in Fodder. winter as fodder.

Abroma augusta. *Perennial Indian Hemp.*

Vern.—Bengali, Ulatkambal.

A perennial shrub, 10 to 12 feet; found in Bengal and South India. The root-bark is a valuable remedy for female diseases, specially in Medicine. irregular menstruation, but it does not appear to have received the attention it deserves. The stalks yield a fine, strong fibre, a cord made of Fibre. which bore 74 lbs., while *san* broke with 68 lbs. Dr Royle, in his "Fibrous

Plants of India, states that "it particularly attracted Dr. Roxburgh's attention, as the bark abounds with strong white fibres, which make a very good substitute for hemp, affording good common cordage. The plant grows so quickly as to yield annually two, three, or even four cuttings fit for peeling; hence it may be advantageously cultivated, and is deserving of more than common attention on account of the beauty, strength, and fineness of its fibres." The tree is scarce around Calcutta, but is said to be common in the Malda district.

Abrus precatorius. *Bead Tree; Indian Liquorice.*

Vern.—*Sanskrit* Gunja, *Persian*, Chashm-i-khoras, *Bengali*, Kunch; *Hindi*, Ghuncha, *Dakhini*, Gumcha, *Tamil*, Gundumann, *Telugu*, Guriginja, *Burmese*, Khien-ra.

A twining plant, found all over India and Burma. There are three varieties of the plant, producing red, black, and white seeds. The red seeds are principally used as an ornament, and also for jewellers' weight, each measuring about two grains. In Egypt they are used as an article of food, but are considered indigestible. The white seeds are poisonous, producing vomiting and pains, purging, and convulsions. The whole plant is demulcent, and the root is efficacious as a good substitute for liquorice. The leaves, mixed with honey, are applied to swellings.

Abutilon indicum. *Indian Mallow.*

Vern.—*Bengali*, Potári, *Hindi* Kungani; *Dakhini*, Kangoi, *Tamil*, Perun-tuti, *Telugu*, Nugubenda Tutti.

A small shrub, 2 to 3 feet, common in most parts of India. The whole plant abounds in mucilage. An infusion of the leaves is given in fevers as a cooling drink, the seeds are considered a laxative. The stalks yield a strong fibre.

A small sample of the fibre of another species of Abutilon, called *Ielái-thuthi* in Tamil, has been contributed by the Forest Department of Madras.

Acacia arabica. *Gum Arabic.*

Vern.—*Sanskrit*, Barbará, *Bengali*, Báblá, *Hindi*, Bábúl, *Dakhini*, Káli-kíkar; *Tamil*, Káruvelam, *Telugu*, Nallá-Tumá.

A valuable tree, 30 to 40 feet; found in almost every part of India. The wood, though not straight, is very strong, and supplies the cultivator with his plough-handles, sugarcane-rollers, spokes, naves, wheels of carts, &c. The bark is a powerful astringent, and the best and most extensively used tanning substance in India, which may probably become an article of commerce, if its value is properly appreciated by European tanners.

The following extract is made from a letter of Mr. W. N. Evans, Tanners' Laboratory, Taunton (published in the *Tropical Agriculturist* of

the May 1880) with regard to the value of Bâbul bark as a tanning material :—

"I have also received from India specimens of the bark of the Bâbul tree (*Acacia arabica*), which gives a percentage of 18·95 of tannin. One fact worthy of notice with this bark is the beautiful creamy white colour it gives when precipitated with gelatine, this being at present the only bark or tanning material that gives that colour. The Bâbul is very abundant in India, and might be worth sending to England, where, for the best kind of work, it would probably be worth from £12 to £14 per ton."

The pods yield a black dye. Medicinally, an extract of the bark is Dye. given as a demulcent and astringent; the leaves in mucus discharges; Medicine the pods in coughs; and the gum as a substitute for gum acacia, which is Gum. the produce of *Acacia vera*. The bark of the slender stalks is fibrous, and Fibre. may be used in the manufacture of paper.

The leaves, pods, and seeds are a good fodder for cattle, sheep, and Fodder. goats, and their value as such is much enhanced in seasons of drought where other cattle-food fails. Lands deteriorated from over-cropping are much benefited by the cultivation of *Acacia arabica* on them by the layer of manure which the falling leaves gradually form.

Acacia Catechu. Catechu, Cutch.

Vern.—Sanskrit, Khadir; Bengali, Khayer, Hindi, Kathi, Dakhni Khair; Tamil, Keshu-katti, Wodahior, Telugu, Podala-manu, Vempachettu-putta.

A tree, 30 to 40 feet; found in the forests of India and Burma. The Catechu of commerce, formerly known as Terra Japonica, is an extract obtained by boiling the wood of this tree. Similar extract is also Resin. obtained from *Uncaria Gambier*, and from the nuts of *Areca Catechu*. It is a valuable astringent, used as a dyeing, and tanning material, as well as in Dye and Medicine. medicine in diarrhoea, dysentery, and mucus discharges. Two sorts of Catechu are known in commerce,—the black, called Catechu or Gambier; and the white, the Cutch. Dr. Balfour makes the following remarks on its value as a dyeing and tanning material :—

"Both kinds of catechu contain about half their weight of tannin, which differs from that of galls in affording olive-green precipitates with salts of iron, and yielding no pyrogallie acid on destructive distillation. The tannin of catechu is soluble in cold water; catechu also affords a peculiar principle, which has been named *Catechin* and *Catechuic Acid*, which is not soluble in cold water, but is slightly so in the solution of the tannin of catechu. Catechu is extensively used in Indian tanning, and of late years has also been much used in Britain. It tans the skins with great rapidity, but the leather is light, spongy, permeable to water, and of a dark reddish fawn colour. The light-coloured variety of catechu produces a softer leather than that tanned with cutch. Catechu produces but little of the deposit of bloom which is yielded by oak bark, valonia, and divi. Catechu is used by calico-printers to produce a fast bronze on cotton fabrics. When of good quality, catechu is more powerful as an astringent than kino. Of all known astringent substances, the catechu appears to contain the largest proportion of tannin, and Mr. Jarvis found that one pound was equivalent to seven or eight of oak bark for tanning leather."

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The varieties of catechu known at the Calcutta market are *Belguti*, 4*d.* per lb.; *Pegu*, 6*d.* per lb.; *Ganti*, 5*d.* per lb.; *Fanakpuri*, 5½*d.* per lb. The total exports of Cutch and Gambier from India during the five years ending 1880-81 are as follows:—

	Cwt.
1876-77	264,933
1877-78	195,320
1878-79	217,194
1879-80	222,123
1880-81	316,077

The wood is very durable and is considered a valuable timber

Acacia concinna.

Vern.—*Bengali*, Ban-ritha; *Hindi*, Rithá, *Dakhni*, Sike-kai; *Tamil*, Shaka; *Telugu*, Chikaya; *Burmese*, Ken Bwon.

Soap-nut.

A climbing shrub, found in South India, Bengal, Assam, and Burma. Major Drury states that a considerable trade is carried on in some parts of India in the pods of this tree, which resemble the Soap-nut, the fruit of *Sapindus detergens* and *S. trifolius*, and are used for washing the head. The plant is not, however, known in Calcutta. Dr. Balfour states that the "pods and bark are exported from Canara, the former as a washing material, and the latter for dyeing and tanning fishing nets."

Dye.

Acacia Latronum.

Vern.—*Hindi*, Bhes, *Telugu*, Paki-tuma.

Fibre.

A thorny shrub, found in Southern India. It yields fibre, a specimen of which has been contributed by the Madras Forest Department.

Acacia leucophloea. *Panicle Acacia.*

Vern.—*Hindi*, Kikar, *Dakhni*, Sharab-ki-kikar, *Tamil*, Vel-velam; *Telugu*, Tellatamma.

Intoxicant.

Fibre.

Dye.

Gum.

A tree, found in South India as well as in the Punjab and the North-Western Provinces. In South India and Rajputana, an intoxicating liquor is distilled from the bark, mixed with palm juice and sugar. A coarse, tough fibre is also extracted from the bark, of which large fishing nets and rough cordage are made. The leaves are used in dyeing a black colour. According to Dr. Ure, *gum bassora* is obtained from this tree, a specimen of which has been contributed by the Madras Forest Department.

Acacia speciosa. *See Albizzia Lebbek.*

Acalypha indica. *Indian Acalypha.*

Vern.—*Bengali*, Potári; *Hindi*, Kuppi; *Tamil*, Kuppai meni; *Telugu*, Kuppai-chettu.

A small shrub, growing as a weed in gardens. The juice of it is fresh

plant is used as an emetic and expectorant. An infusion of the dried plant may be used similarly.

Achyranthes aspera. *Rough Chaff Tree.*

Vern.—Sanskrit, Apamārga; Bengali, Apāng; Hindi, Chirchirā; Dakkhini, Aghara; Tamil, Nāi-uriv; Telugu, Utareni.

A shrub, 3 to 4 feet; found all over India. The plant possesses valuable medicinal properties as a pungent and laxative, and is considered **Medicine.** useful in dropsy, piles, boils, eruptions of the skin, &c. Mustard oil, in which the root of this plant has been boiled, is considered very efficacious in bad ulcers. The seeds and leaves are considered emetic, and are useful in hydrophobia and snake-bites.

Aconitum ferox. *Aconite.*

Vern.—Sanskrit, Atibisha; Bengali, kāt Bish; Hindi, Mithātīti; Dakkhini, Uchanak; Tamil, Vasha-navi.

A shrub, 2 to 3 feet; found at high elevations in the Himalayas. The root, known as Aconite in English Pharmacopœias, is highly poisonous, and is used as a very effective medicine in various kinds of diseases, but great **Medicine.** caution is necessary in its use. One lb. of the root contains about 50 to 90 grains of *Aconitine*, one-tenth of a grain of which is fatal to man. It is chiefly used externally in tetanus, rheumatism, gout, heart disease, &c. Other species of the plant, such as *A. luridum*, *A. Napellus*, and *A. palmatum*, possess similar properties.

Aconitum heterophyllum.

Vern.—Sanskrit, Atas; Hindi, Atis; Dakkhini, Vajje-turki; Tamil, Ativadayam; Telugu, Ativasa.

A shrub, 2 to 3 feet; native of the Himalayas. The root of this variety **Medicine.** contains no poisonous principle, is reckoned a tonic and valuable febrifuge, and is administered in various diseases. The root is adulterated with that of *Asparagus sarmentosus*. There are two kinds, one black and the other white.

Acorus Calamus. *Sweet Flag.*

Vern.—Sanskrit, Vacha; Persian, Vaj; Bengali, Ilindi; Bach; Tamil, Vasambu; Telugu, Vadaja; Burmese, Linbe.

A semi-aquatic perennial, native of Europe and North America, but cultivated in damp, marshy places of India and Burma for its medicinal **Medicine.** virtues. The whole plant is aromatic, but the rhizomes only are used in medicine, which contain an aromatic bitter principle, and are considered useful in epilepsy, cold, fever, coughs, rheumatism, colic, dyspepsia, and various other diseases. An essential oil is obtained from the

leaves, which in England are used by perfumers in the manufacture of hair-powders.

***Adhatoda Vasica.* Malabar Nut.**

Vern.—Sanskrit, Arus; Bengali, Bâkas; Hindi, Arúsá, Tamil, Adádode; Telugu, Adasara.

A shrub, 8 to 10 feet; found all over India. This is a medicinal plant which has not yet received the attention it deserves. The leaves and the root-bark are considered very efficacious in all sorts of coughs. The flowers and the root are bitter, aromatic, and antispasmodic. A yellow dye is obtained from the leaves. The wood makes good charcoal for gun-powder manufacture.

***Adiantum venustum.* Venus hair.**

Vern.—Hindi, Par-i-siya-washan, Hansráj.

A fern, found in the Himalayas, possessing astringent and aromatic properties; emetic in large doses; also considered a tonic and febrifuge. It forms the basis of capillaire syrup.

Adina cordifolia.

Vern.—Hindi, Haldu.

A large Himalayan timber tree. The wood is durable, seasons well, and takes a fine polish.

***Egle Marmelos.* Bengal Quince; Bael Fruit.**

Vern.—Sanskrit, Sriphal, Bengali, Hindi, Bel, Tamil, Vilva-pazham; Telugu, Bilva-pandu.

A tree of middling size, found all over India. The fruit, known as the Bengal quince, is eaten by the people, and is very nutritious. The dried pulp of the unripe fruit is a valuable remedy for chronic diarrhœa, dysentery, and habitual costiveness. It ought to become an article of export. At present large quantities of the pulp are thrown away in Birbhum in Bengal, where the rind is used to make necklaces. The root, bark, and leaves are given in intermittent fevers, palpitation of the heart, and asthma. A transparent mucus surrounds the leaves, which may be used as a ready-made varnish. A yellow dye is obtained from the rind of the fruit. A perfumed water is distilled from the flowers.

***Eschynomene aspera.* Solá.**

Vern.—Bengali, Solá; Tamil, Atunete; Burmese, Pauk.

A perennial found in the marshes of Bengal, Assam, Burma, &c. South India. From the pith of this plant the solá hats are made, which

being bad conductors of heat, are very useful in hot climates. Soil is also used in making bottle-covers, fans, toys, mats, &c. In Burma a fibre fibre is obtained from the plant.

Agates:

Vern.—Persian, Sang-i-sulaimán.

Specimens of agates have been obtained from Jabalpur in the Central Provinces. The following prices have been given of a few articles at the place of production:—

	s.	d.	8	s.	d.
Paper-knives, 7" to 18" long	6	8	to	2	1 8 each.
Plate of agates and jasper of various sizes and colours, $\frac{1}{4}$ inch thick, 2" to 4" long, shapes oval, long, and square, polished on both sides, edges level	0	10	to	0	4 2 "

Agathotes chirayta. See *Ophelia chirayta*.

Agave americana. *Aloe Plant.*

Vern.—Bengali, Koyan, Murga; Hindi, Rakas; Tamil, Anaik-katragh-ai; Telugu, Rakasni mattalu.

The American aloe, a native of America, is now common in every part of India, where it forms a good hedge plant. An excellent fibre is obtained from the leaves, suitable for the manufacture of ropes, and other articles. Beautiful strong mats are manufactured from this fibre at Hazaribagh, in Bengal. A ligneous fibre is also obtained from the stem of the plant, which is known in Madras as the *Pitá* thread. Major Drury states that in many comparative experiments aloe fibre rope was found stronger than coir, country hemp, or jute; a bundle of it bore a weight of 270 lbs., while that of Russian hemp only 160 lbs. (For further account see Dr. Royle's "Fibrous Plants of India," 1855 p. 41 *et seq.*) According to Lindley, the roots possess diuretic and antisiphilitic properties, and are brought to Europe mixed with sarsaparilla.

Agave vivipara. *Bastard Aloe.*

Vern.—Hindi, Hathuchingar; Tamil, Kathalai; Telugu, Pethakalabantha.

This species is closely allied to the above, and is common in the Western Provinces. The fibre is said to be equal in strength to the best Russian hemp.

Ailanthus excelsa.

Vern.—Hindi, Maharukh; Tamil, Peru-pi; Telugu, Pedu-pe-pedda.

A large tree, native of Central and South India. The wood is used to make floats for fishing-nets, sword handles, &c., and the bark as a tonic.

and febrifuge. The tree also yields a gum, a specimen of which has been contributed by the Madras Forest Department.

Alanthus malabarica.

Vern.—*Tamil*, Peru-mara, Mati-pal; *Telugu*, Mati-palu.

A large tree, native of the forest of South India, but not very common. Major Drury states that "the bark has a pleasant and slightly bitter taste, and is given in cases of dyspepsia, and is, moreover, considered a valuable tonic and febrifuge." The thick bark, on incision, yields a bright-coloured resin, known as the Matipal resin, which is used as a remedy for dysentery. The fruit is considered useful in cases of ophthalmia.

Albizia Amara.

Vern.—*Dakhini*, Lallei; *Tamil*, Thuringi; *Telugu*, Nallarenga.

Timber.
Gum.

A moderate-sized tree, native of South India and Dekhan. It yields a strong close-grained timber, and a gum, a specimen of which has been contributed by the Madras Forest Department.

Albizia Lebbek.

Vern.—*Bengali*, Siris; *Hindi*, Siras.

Medicine.
Oil.

A large tree, found in most parts of India. The bark and the seeds are astringent, given in piles, diarrhœa, &c. An oil extracted from the seeds is considered useful in leprosy. The flowers are used as a cooling medicine, and are also externally applied in boils, eruptions, and swellings. The leaves are considered useful in ophthalmia. The tree yields large quantities of gum, resembling gum arabic. The bark is also used in tanning leather.

Gum.
Tan.

Albizia odoratissima. Fragrant Acacia.

Vern.—*Hindi*, Sirsa, *Dakhini*, Saṛis, *Tamil*, Karuvaga; *Telugu*, Shinduga.

Medicine.
Gum.

A tree, 30 to 40 feet; found in Sub-Himalayan tracts, Travankor, and the Coromandel Coast. The bark, applied externally, is considered efficacious in leprosy and in inveterate ulcers. A dark-brown gum exudes from the bark, a sample of which has been sent from Madras.

Albizia procera.

Vern.—*Hindi*, Sufed Siris; *Dakhini*, Kanalu, *Tamil*, Pedda-patseru; *Telugu*, Chikul.

Timber.
Gum.

A large deciduous tree, found in the Sub-Himalayan tract, South India, and Burma. The timber seasons well, is durable, and used for agricultural implements. The tree yields large quantities of gum.

Aleurites moluccana Belgaum Walnut.

Syn.—*A. triloba*.

Vern.—*Bengali*, *Hindi*, Akhrot.

An interesting plant, said to be native of the Society Islands, now

introduced into India, in Bengal, Assam, and South India. The nuts are **Nuts.** edible, resembling the English walnut in taste; a useful oil, known in South India and Ceylon as the *kekund* oil, is easily extracted from the **Oil.** kernels; the cakes after the expression of the oil can be used as cattle- **Fodder.** food or as manure.

Alhagi maurorum. Manna.

- **Vern.**—*Sanskrit*, Giri-karnika; *Persian*, Shutar-khor; *Bengali*, *Hindi*, Juwasa; *Telugu*, Tella-giniā-chettu.

A shrub, 2 to 3 feet; native of the deserts of Egypt, Arabia, Asia Minor, **Fodder.** Beluchistan, and Central India. It is the chief fodder for camel in those desolate regions. The substance known as Manna is the exudation from the leaves and branches of this shrub, but the Indian plant does not form this • excretion. The herb itself is considered cooling and bitter, and is used in **Medicine.** bilious complaints and vertigo. The manna is administered in coughs, uterine diseases, and pulmonary affections.

Allium Cepa. Onion.

- **Vern.**—*Sanskrit*, Palāṇḍu; *Bengali*, Pyāj; *Hindi*, Pyāz; *Tamil*, Vengayam; *Telugu*, N-rulla; *Vallu-gaddalu*; *Burmese*, Ky-et-thwon-ni.

The onion, cultivated all over India and used as a vegetable and a spice. **Food.** Its medicinal virtues are thus described by Mr. Baden-Powell:— **Medicine.**

“The bulbs contain an acrid volatile oil, and act as stimulants, diuretics, and expectorants; they are occasionally used in fever, dropsy and croup, catarrh and chronic bronchitis; also in colic and scurvy; also externally as rubefacients, and, when roasted, as a poultice. Considered by natives hot and pungent; useful in flatulency, and to prevent the approach of snakes and venomous reptiles.”

Allium sativum. Garlic.

- **Vern.**—*Sanskrit*, Mahaushadha; *Persian*, Sir; *Bengali*, Rasun; *Hindi*, Lasan; *Tamil*, Vallai-pandu; *Telugu*, Ell-ulli Tella-gadda; *Burmese*, Kyethwon-pen.

The garlic is cultivated all over India and used as a condiment. Natives **Condiment.** consider it hot and aperient; given in fevers, coughs, piles, leprosy, and **Medicine.** special diseases. Externally its juice is applied to the ears for deafness and pain. The oil extracted from the seed is also medicinal.

Aloe indica. Aloes.

- **Vern.**—*Sanskrit*, Bhrita-kumari; *Persian*, Mussabbi; *Hindi*, Ghu-komari; *Dakhini*, Kanwar; *Tamil*, Kattale; *Telugu*, Kala banda; *Burmese*, Mok

A species of aloe, found in all parts of India. Major Drury states that an inferior description of aloe is obtained from it. Dr. Balfour states that the pulp is eaten by the natives after washing it well in cold water. **Food.**

chitensis. The seeds also possess medicinal properties like the root, and are given in dyspepsia, rheumatism, and catarrhal affections. Dr. Birdwood states that a spurious article, the root of *Kampferia galanga*, is often substituted for the true galangale.

The quantity and value of galangale (Indian produce) exported during the five years ending 1880-81 are as follows:—

	Cwt.	£
1876-77	626	400
1877-78	312	202
1878-79	702	570
1879-80	1,139	941
1880-81	542	450

Alpinia nutans. *Light Galangale*.

Vern.—*Persian*, Kastas-zemabek, *Bengali*, Punaf champa, *Hindi*, Bachi, *Burmese*, Pa-ga-gyi.

A native of Eastern Archipelago, found in Burma on the banks of the Salween, in Silhet, and on the Coromandel Coast. The whole plant is fragrant like the cardamoms. The roots are often mixed with the true galangale. Medicine.
Perfumery.

Alstonia scholaris

Vern.—*Sanskrit*, Ayugma chaddi, *Bengali*, Chhatin, *Hindi*, Satawai, *Tamil*, Irillepallay, *Telugu*, Eda-kula-ariti.

A tree, 50 feet; native of Bengal, Assam, South India, and Burma. The whole plant abounds in a milky juice. The bark is bitter like Gentian, and is said to possess similar medicinal properties. It is a powerful tonic, efficacious in bowel complaints, and useful as a febrifuge. Medicine.

Althæa rosea. *Holly-Hock*.

Vern.—*Hindi*, Gulkhaira, *Tamil*, Shemai-tutti.

A native of Kashmir and the Punjab Himalayas. The seeds are mucilaginous, demulcent, diuretic and febrifuge, and are useful in inflammation of the lungs and bladder. The flowers are cooling and diuretic, prescribed in rheumatism; roots are considered astringent and given in dysentery. The leaves yield a colouring matter resembling indigo. Mr. Murray states that more than 3 cwts. of seeds and 7 cwts. of flowers are annually exported from Afghanistan. Medicine.
Dye.

Alum.

Vern.—*Bengali*, Hindi, Phatkiri, *Tamil*, *Telugu*, Pat-karara.

Two kinds of alum are sold in the market,—white, chiefly imported; and pink-coloured, manufactured in the country from the bituminous shale

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found in the hilly parts of Central India and the Salt-ranges of the Punjab. The white kind is chiefly used in medicine, and the pink as a mordant in dyeing.

Amak. (Unidentified.)

A fibre found in the Garo Hills with which the Garos make their quilts.

Anali grass. (Unidentified.)

Found in marshes near Calcutta ; at present only used as a fodder in its green state.

Amarantus Anardana.

Vern.—Hindi, Chua.

Grown in the Himalayas for its seeds ; used as an article of food by the poorer classes.

The *Amarantus* is a very important genus, the different species of which are useful to the poorer classes in various ways : the seeds of some, made into cakes, form, in many parts of the country, the staple food of the poor for some months of the year, while others are used as greens.

Amarantus Blitum. *Hermaphrodite Amaranth.*

Vern.—Hindi, Chaulai.

Grown in the Himalayas and the Punjab ; seeds used for food.

Amarantus campestris.

Vern.—Sanskrit, Mekanada ; *Dakhini*, Churi-ki-báji ; *Tamil*, Sirru-kirai ; *Telugu*, Sirru-kura.

Common in Bengal and Travankor ; leaves used as greens ; roots used medicinally as a demulcent.

Amarantus caudatus. *Love lies Bleeding.*

Vern.—Hindi, Kedari-chua.

Cultivated in the Himalayas ; seeds used for food.

Amarantus farinaceus.

Used medicinally, and said to possess diuretic and purifying properties.

Amarantus frumentaceus. *Prince's Feather.*

Vern.—Hindi, Bathu ; *Tamil*, Kirai.

This species is extensively cultivated in Upper India, in Mysor and Koimbatour, where the seed forms, for some months of the year, the staple

food of the people. In an experimental cultivation in the Calcutta Botanical Gardens, the yield on 40 square yards of land was 21 lbs. of seed, giving an average of more than 22 cwts. per acre. It is extensively cultivated in the North-Western Himalayas up to an elevation of 10,000 feet. Land newly cleared of forest yields a heavy crop. Bears, deer and other wild animals do not easily injure it, as they generally do other crops in these regions. Here it is the staple food of the poorer classes. Food

Amarantus gangeticus, var. **angustifolia**. *Bamboo-leaved Amaranth*.

Vern.—*Bengali*, Bānspātā-nām.

Leaves eaten as greens, and used medicinally as emollient poultices. Vegetable;
Medicine.

Amarantus paniculatus.

Vern.—*Persian*, Bathuzard.

Largely grown in the North-Western Himalayas; seeds used for food by the poorer classes. Food.

Amarantus spinosus *Prickly Amaranth*.

Vern.—*Bengali*, Kanta-natia; *Tamil*, Muluk-kurū, *Telugu*, Koya-tota-kura, *Mundla*, tota-kura.

Grows freely on uncultivated lands. The whole plant is used as an antidote for snake-poison, and the root is held as a specific for colic. The jugglers, by chewing the leaves beforehand, are enabled to grind pieces of glass with their teeth. It is also considered lactiferous, and given to cows boiled with pulses. The tender tops are eaten as greens by the poorer classes. Medicine.

Vegetable.

Ambpuri or **Ambari**. *See Hibiscus cannabinus*

Aminār. (Unidentified.)

A fibre, sample of which has been sent by the Madras Forest Department. Fibre.

Ammannia baccifera. *Blistering Ammania*.

Syn.—*A. vesicatoria*

Vern.—*Bengali*, Pan-marich, *Hindi*, Dad-mari, *Dakhini*, Agni-butī; *Tamil*, Kallurivi; *Telugu*, Agnivendrapaku.

A small plant, $\frac{1}{2}$ to 3 feet; found on wet lands in Bengal and South India. The plant has a strong smell, like that of muriatic acid, and is used to raise blisters in rheumatic pains, but is not recommended, owing to the excessive pain it causes. The juice of the plant is given internally in spleen; but it causes great pain and the result is not certain. Medicine.

Ammonia hydrochlorica. *See* Sal Ammoniac.

Amomum aromaticum. *Greater Cardamom.*

Vern.—*Bengali*, Morang iláchi.

Native of Chittagong and eastern frontier of Bengal; the fruit resembles the true cardamoms in shape and quality, and are often sold as s. h.

Amomum Cardamomum. *Greater Cardamom.*

Vern.—*Bengali*, *Hindi*, Iláchi; *Tamil*, Yelarsi; *Telugu*, Yelakulu; *Burmese*, Ben.

The greater cardamom of commerce, native of the lower Himalayas; the fruits are largely used as a spice, as also in medicine. A medicinal oil is extracted from the seeds.

Amoora Rohituka.

Vern.—*Bengali*, Tiktaráj; *Hindi*, Harinhara; *Tamil*, Shem-maram; *Telugu*, Chawamanu; *Burmese*, Chayau-ka-yoe.

A native of Bengal, South India, and Burma. An oil extracted from the seeds is used for various economical purposes. The bark is used in medicine as an astringent.

Amorphophallus campanulatus. *Telinga Potato.*

Vern.—*Sanskrit*, Kand (a common name for all roots); *Bengali*, Ol; *Hindi*, Zamin-kand; *Tamil*, Karuna; *Telugu*, Muncha kunda.

An annual, 3 to 6 feet; grows wild in abundance in shady moist lands of Bengal. When cultivated in rich soil, the largest roots weigh from 40 to 80 lbs.; and Major Drury affirms that an acre of land yields from about 72 to 180 cwts. of fresh roots. In the rainy season, the fetid odour from the opening inflorescence is very disagreeable. Boiled and cooked, the tuber is used for food by all classes, and is esteemed wholesome. The raw wild tuber and the seeds are irritant, and are applied externally to rheumatic swellings and boils.

Amygdalus communis. *See* Prunus Amygdalus.

Anacardium occidentale. *Cashew Nut.*

Vern.—*Bengali*, Hiji bádám; *Hindi*, Kaju; *Tamil*, Munḍiri-kottai; *Telugu*, Idi Mamidi.

A perennial, 30 to 40 feet; indigenous to the West Indies; now common in Burma and the eastern coast of India. The fruit is of a bright scarlet colour, at the bottom of which the Cashew nut protrudes. The kernel when raw is exceedingly acrid, but when boiled it forms a delicious article of food. The oil of the nut is used as an anæsthetic in leprosy with

advantage. In warts, corns, and ulcers it is also held beneficial. The expressed juice of the fruit is given in diarrhoea and diabetes. The oil of the nut, by virtue of its acidity, prevents the attacks of white-ants upon wood. The astringent juice, which oozes out from the trunk, gives a beautiful varnish, and may be substituted for gum arabic. The Tan. bark may be used for tanning.

Dr. Kanny Lall Dey, in his "Indigenous Drugs of India," makes the following remarks on the use of the different products of this tree:—

"The kernel has a sweet and agreeable taste, and is eaten with relish when roasted. The oil obtained from it by expression is exactly similar to olive oil. A gum, that exudes from the bark, resembles gum arabic, but is partially soluble in water, and consists of true gum and Bassorine. The pericarp of the nut contains a black acrid oil, called *cardole*, and is a powerful vesicating agent. The oil is also applied to the floors and wooden rafters of houses to prevent the attacks of white-ants. Specific gravity of the kernel oil, 0.9160; soluble in ether; partially in alcohol. It is nutritive and emollient; internally used as a demulcent in form of emulsion; can be used in pharmacy like olive oil. The gum may be used as a substitute for gum arabic."

Ananassa sativa. Pine-apple.

Vern.—Bengali, Anáras; Dakhini, Anúnas; Tamil, Anasha; Telugu, Ananas.

A perennial, 1 to 3 feet; native of the moist forests of South America; Fruit. said to have been introduced into India by the Portuguese in 1594, but now common in Bengal, Burma, South India, and at the foot of the Himalayas. The pine-apple may be grown in abundance in all warm countries, in damp soils, under the shade of trees. When once planted it requires very little attention; although, if cultivated with care and manured with sweepings, the size and taste of the fruit are much improved. The fruit, which is abundant in the rainy season, is very agreeable. The leaves, sometimes 3 yards long, yield a fine white fibre, which is made into strings and ropes. They become stronger when wet. In Java and the Straits, a valuable fabric, the *pina* silk of commerce, is manufactured from it. Dr. Royle, in his "Fibrous Plants of India," makes the following remarks on the Ananas fibre:— Fibre.

"The pine-apple, or ananas, is so well known as an object of the most careful culture in Europe, on account of its pleasantly sweet and aromatic fruit, that we should not expect to find it included among cordage plants. But its long and rigid leaves, which are thorny at the edges and point, abound in a quantity of fine white fibres which are, in some countries, woven into the finest fabrics, netted or twisted into lines for fishing and into ropes possessed of considerable strength. These are said not to be injured by constant immersion in water, a property which the natives increase by tanning them. . . . In the experiments which I have made with these various fibres (different kinds of pine-apple fibres), a certain quantity of those prepared at Madras bore 260 lbs., while a similar quantity from Singapur bore 350 lbs. before they broke; but New Zealand flax, in the same proportions, bore only 260 lbs."

The extraction of the fibre from the leaves is, however, very laborious, and until some machine is invented for facilitating the process, the industry

has no chance of further development in India. The juice of the fresh leaves is a powerful anthelmintic, and that of the fruit a remarkable antiscorbutic.

Andrographis paniculata. *King of Bitters.*

(c) Vern.—Sanskrit, Kairata; Bengali, Kálmegh; Hindi, Kriat; Dakhini, Kalafnath; Tamil, Nila-vembu; Telugu, Nela-vemu.

An annual, 1 to 1½ feet; grows wild in Bengal upon walls and on dry ground, and cultivated in South India for its stomachic and tonic properties. It blossoms in winter. The whole plant, known as the "King of Bitters," contains medicinal properties, but the roots and the leaves are rather more appreciated. They are febrifuge, stomachic, tonic, alterative, and anthelmintic. The root of this plant enters largely into the tincture called "Droge amere." Mr. Murray, in his "Plants and Drugs of Sind," states that this plant "is very useful in general debility, in advanced stages of dysentery, and as a mild aperient in certain forms of dyspepsia." According to Rai Kanny Lall Dey, Bahadur, the domestic medicine known as *aloie* is composed of the juice of this plant mixed with some carminative and formed into pills. No trade appears to exist in this medicinal plant, but any quantity of it can be exported if a demand arises for it.

Andropogon acicularis. *See* Bhatui grass.

Andropogon calamus aromaticus. *Sweet Calamus.*

Vern.—Hindi, Rusá Ghás.

This scented grass, called sweet calamus in English, grows wild in Central India, North-Western Provinces, and Punjab.

The oil obtained from this plant, known as the Rusa grass-oil, is sold in England under the name grass-oil or oil of rose-scented geranium. The grass-oil is seldom taken internally by the natives, but is considered a powerful stimulant to the functions of the several organs, when rubbed externally, and is used as a liniment in chronic rheumatism and neuralgic pains: but it is too expensive for general use. The oil prevents the hairs of weak invalids from falling off, and is also considered very efficacious in baldness.

Andropogon contortus.

Specimen sent by Superintendent of the Saharanpur Botanical Gardens. The grass is chiefly used as a fibre.

Andropogon muricatus. *Khas-khas.*

Vern.—Sanskrit, Usir; Bengali, Khas-khas ghás; Hindi, Khas; Tamil, Kette-ver; Telugu, Kuruveru.

This species of grass grows in abundance on high sandy banks and waste tracts in Bengal, the Coromandel Coast, and Upper India. The

roots are made into mats and placed before doors in the hot season, which, when wetted, render the atmosphere cool, and impregnate it with a balmy odour. On distillation with water, they yield a fragrant oil, which is used as a perfume, and as such it deserves the attention of European perfumers. The infusion of the roots is held to be stimulant, diaphoretic, stomachic, and refrigerent.

Perfume;

Medicine.

Andropogon, sp.

Vern.—Bengali, Deb-Dhanya.

It is cultivated in some parts of Eastern Bengal for its grain, which resembles seeds of *Sorghum bicolor*. A small sample of this grain has been received from Bogra.

Anilema tuberosa.

Vern.—Hindi, Siyah musli.

Native of Kumaun; the rootlets, known as the *Siyah musli*, are said to possess astringent and tonic properties. See also *Curculigo orchioides*.

Medicine

Anethum graveolens. }
Anethum Sowa. } See *Pucedanum graveolens*.

Animal Products.

The collection made under this head is not large. It consists of—

- (1) Butter, oils, fat, and grease;
- (2) Feathers;
- (3) Fish;
- (4) Hides, skins, leather, and horns;
- (5) Lac and cochineal;
- (6) Shells;
- (7) Silk, raw, and cocoons;
- (8) Wax and honey;
- (9) Wool and hair.

Anogeissus latifolia.

Vern.—Hindi, Dhawa, Dhawra, Bakli; Telugu, Sheri-manu.

A native of the forests of the Himalayas and South India. The tree yields a gum, used by the calico-printers. The wood is highly valued on account of its great durability, and its suitability for agricultural implements, railway sleepers, and ship-building.

Gum.
Timber.

Anona reticulata. Netted Custard-apple.

Vern.—Bengali, Nona; Dakhini, Rámphal; Tamil, Rámsitá maram; Telugu, Rám chettu.

A tree, 20 to 30 feet; grows wild or cultivated in Bengal, Burma, and South India. Its dark-brownish fruit (netted custard-apple), which

Fruit.

ripens in the hot season, is eaten by the natives, but is not much esteemed. The dried unripe fruit yields a black dye. A good fibre can be extratted from the branchlets, which is suitable for the manufacture of rope, cordage, &c. As the tree requires no cultivation, and the fruit improves by pruning after it is in season, the fibre can be obtained at a small cost from the cuttings. As a cheap article, therefore, it deserves some attention.

***Anona squamosa.* Custard-apple.**

Vern.—Bengali, Ath; Hindi, Sariphá; Tamil, Telugu, Sitáphalam.

Cult.

A small tree, 15 to 20 feet; native of South America, now thoroughly naturalised in India, where it thrives in the plains. It grows wild in the Dekhan, but is cultivated in Upper India for its fruit (custard-apple), which forms a delicious article of food. Dr. Balfour states that "at times of scarcity it literally proved to be the staff of life to the natives. It was formerly cultivated with much success in Pegu, but since the country passed under the British rule these plantations have fallen into much neglect and supplies of the fruit are diminishing, and it is expected that the fruit will soon become very scarce." The custard-apple and other sub-acid fruits are largely eaten by the Burmese with rice. If properly looked after and pruned during the hot season, the tree produces fruit of double the usual size. Medicinally the ripe fruit is considered a maturant, and, bruised and mixed with salt, it is applied to malignant tumours to hasten suppuration. The seeds contain an acrid principle fatal to insects; and the dried unripe fruit, powdered and mixed with gram flour, is used to wash the head with the object of destroying vermin. An infusion of the leaves is considered efficacious in prolapsis ani of children. The root is considered a drastic purgative; natives administer it in acute dysentery.

Medicine.

Anthemis nobilis.* See *Matricaria Chamomila.

Anthemis pyrethrum.* See *Pyrethrum indicum.

Antimony.

This metal is chiefly brought from Kandahar. In its ter-sulphide composition it is used as a cosmetic for the eyes and is said to strengthen the eyesight.

***Apium involucratum.* (*Reduced to Carum Roxburghianum.*)**

Syn.—*Ptychotis involucrata.*

Vern.—Bengali, Ránduni; Hindi, Ajmodh.

Medicine.

Cultivated for its seeds, used as a spice as well as in medicine. Mr. Baden-Powell states that the roots and the fruits are considered bitter, heating, diuretic, and laxative, used for jaundice and gravel, and to remove colic, increase the appetite, and sweeten foetid breath; also for flatulence,

stoppage of urine, and menses. The wild plant is considered poisonous; used as an aromatic stimulant in colic, diarrhoea, and catarrh; also in fever. It probably contains Apiol, an oily liquid substituted for quinine.

Aquilaria Agallocha. *Agallocha; Aloe or Eagle-wood.*

Vern.—Bengali, Agar; Persian, Ud-i-Hind; Hindi, Agar; Tamil, Aggalichan; Telugu, Agru; Burmese, Akyau.

A large tree; native of the mountainous tracts of Silhet and Assam; supposed to produce the true calumbac, or eagle-wood of commerce. Other trees are also said to produce similar substance, as *Aquilaria ovata*, *A. secundaria*, *Excæcaria Agallocha*, and the *Aloexylon Agallochum*. The wood is much prized as a perfume, and is also used in medicine. Given in decoction, it allays thirst in fever, and is also serviceable in vertigo and palsy. An essential oil obtained from it is given in special diseases. In Cochin-China a common paper is manufactured from the bark.

Perfume.
Medicine.
Oil.
Paper.

Arachis hypogæa. *Earth-nut, Ground-nut, or Pea-nut.*

Vern.—Sanskrit, Buchanaka; Bengali, Mât-kalai, chiner-bâdâm; Hindi, Mungphali; Dakhini, Vilâyati-mung; Tamil, Verkadalai; Telugu, Veru-sanaga-kaya; Burmese, Mai-bai.

An annual, a native of South America, now extensively cultivated in South India and some parts of Bengal and Upper India. The fruit of this plant, instead of ripening above ground, buries itself below the surface. When parched, it tastes like sweet almond, and is considered a valuable food in many parts of Asia, Africa, and America. It is also made into sweetmeats in certain parts of India. But the most valuable produce of the plant is the oil, obtained by expression from the seeds. It tastes like the olive oil, for which it is often substituted in pharmacy. It has a specific gravity of about 0.918, becomes turbid at 3°, concretes at 3° to 4°, and hardens at 7°. It is chiefly used for burning in lamps, and in the manufacture of soap. Large quantities of the oil are annually exported from the Madras Presidency.

Fruit.

Oil.

Areca Catechu. *Areca or Betel-nut.*

Vern.—Sanskrit, Gubâk; Bengali, Supâri, Guâ; Hindi, Supâri; Tamil, Kottaipakka; Telugu, Poka-vakka; Burmese, Kwyun.

The most graceful and elegant of all Indian palms, which grows to a height of 30 to 40 feet, with a tuft of feathery leaves at the top; cultivated all along the sea-coast of India and Burma for its fruit—the Areca or Betel-nut of commerce. A decoction from the nuts is used in dyeing, and a kind of inferior catechu is extracted from them. Natives chew the nut with betel leaves (*Piper betel*, vern. *Pân*) or singly, and it is stated that about 50 millions of the human race use it in this way. An excellent tooth-

Dye.
Spice.

powder is prepared from the roasted nuts. Young unhusked nuts possess astringent properties, and are prescribed in bowel complaints and baculcers. An infusion of the ripe nut is given to horses as a purgative. The spathe which covers the tender blossoms is adapted for paper manufacture and the leaves for thatching and matting, as well as for making rough bags. The juice of the palm is intoxicating. The following figures show the export of betel-nut from India during the five years ending 1880-81:—

	lbs.	Value, £
1876-77	687,230	6,085
1877-78	383,553	3,924
1878-79	381,732	4,535
1879-80	2,287,900	21,459
1880-81	967,005	8,077

In the last year (1880-81) the exports were chiefly to the following countries:—

	lbs.
United Kingdom	65,501
East Coast of Africa	208,663
Mauritius	60,142
Aden	34,538
Arabia	24,418
China and Hong-Kong	555,297
Other countries	38,446

Of this quantity, Bengal contributed 97,717 lbs.; Bombay, 775,793 lbs.; Sind, 2,110 lbs.; Madras, 91,385 lbs.

Argemone mexicana. *Mexican Argemone, Gamboge Thistle, Jamaica Yellow Thistle, or Mexican Poppy.*

Vern.—Sanskrit, Brahma-dandī; Bengali, Shīāl-kántā; Hindi, Bherband; Dakkhini, Pīlā-dhaturā; Tamil, Brahma-danduvirai; Telugu, Brahma-dandi-vittulu.

A herbaceous annual, native of Jamaica, the Caribee Islands, and Mexico, brought to India about three centuries ago, now grows spontaneously on waste lands at the beginning of the cold season. The whole plant abounds in a yellow juice, which, when dry, resembles gamboge, and is prescribed in dropsy, jaundice, and cutaneous affections. Externally it is applied in ophthalmia, but is considered a dangerous remedy. The seeds are narcotic; used in the West Indies as a substitute for Ipecacuanha. A pale-yellow, clear, limpid oil is obtained from the seeds, which is used for burning in lamps, and given medicinally in ulcers and eruptions. Price of seeds, 2½d. per lb.

Argyreia speciosa. *Elephant Creeper.*

Vern.—Sanskrit, Samudrapalaka; Bengali, Hindi, Bich-tarak, Gugulī; Tamil, Shamuddirap-pach-chai; Telugu, Samudrapala.

A twining perennial, found all over India. The leaves are both

Medicine.

Oil.

maturative and absorptive; when the under-part is applied to the inflammation it hastens suppuration, and the upper part hastens resolution. It is also efficacious in skin diseases. Medicine.

***Aristolochia indica.* Indian Birthwort.**

- **Vern.**—*Sanskrit*, Sunanda, Hari, Jovari, arkamula; *Bengali*, Isarmul; *Hindi*, Is-hel, Jorabel; *Dakhini*, Sampsun, Isharmul; *Tamil*, Ich-chura-muliver; *Telugu*, Ishvara-veru.

A twining perennial, found all over India, but not in abundance. The root is said to possess emmenagogue and antarthritic properties. It is also reckoned a valuable antidote for snake-bite, and is used to cause abortion. An infusion of the leaves, mixed with castor oil, is considered highly efficacious in obstinate psora. The juice of the fresh leaves is very useful in the croup of children, by inducing vomiting, without causing any depression, where ipecac. and iodide of potassium have failed to procure any favourable result; and it is said that, if resorted to in the earlier stages, no surgical operation becomes at all necessary. Medicine.

Arsenic.

Three compounds of arsenic are found in the market,—white, *vern.* Sankhia; orpiment or sulphuret of arsenic, *vern.* Hartal; and realgar or bisulphide of arsenic, *vern.* Sankhiā surkh and Sankhiā siāh. White arsenic is brought from Burma, China, and the Persian Gulf. All the three kinds of arsenic are used in native medicine, and the yellow orpiment is also used as a dye. Medicine-Dye.

***Artemisia vulgaris*, var. *indica.* Indian Wormwood.**

- **Vern.**—*Sanskrit*, Damana suraparna; *Persian*, Barinj-asif-i-kohi; *Bengali*, Dona; *Hindi*, Gandmar, Mustāru; *Dakhini*, Mustaru; *Tamil*, Machi-pattiri; *Telugu*, Machi-patri.

Cultivated in Indian gardens, but that used in India is brought from Kabul. The dried plant is considered a febrifuge, useful in cerebral diseases, asthma, and dyspepsia. The following history of the plant is taken from Mr. Murray's "Plants and Drugs of Sind":— Medicine.

"This plant is said to have been named Artemis, one of the names of Diana, the goddess of Chastity, on account of the purposes to which it was applied in bringing on precocious puberty. Among tonic, bitter, and aromatic medicines, the plants of this genus are more deserving of notice, the various species having been employed in medicine from the most remote antiquity. Of these, wormwoods are the most celebrated; they derive their English name from their employment as vermifuges. The plant under notice is a powerful deobstruent, and its strong aromatic odour and bitter taste indicate stomachic and tonic properties, and, according to Ainslie, it is regarded as possessing such by the people of Southern India, who sometimes also use it in antiseptic fomentations, as they do its congener, *Artemisia abrotanum*. In nervous and spasmodic affections connected with debility the leaves and tops are administered, and an infusion of them in phagedenic ulceration. Bellev

states that in Afghanistan as throughout India, a strong decoction is given as a vermifuge, and a weak one to children in measles. He also mentions that an infusion of any of the *Artemesias* is given as a tonic. In Sind and Persia, *Artemisia vahliana* also furnishes a tonic, febrifuge, and vermifuge."

***Artemisia vulgaris.* Wormwood.**

Vern.—*Persian*, Berunjasif; *Hindi*, Nágdoná, Páti; *Telugu*, Davatáma.

Common in Kumaun; has stomachic and tonic properties, and is used as a febrifuge.

Artocarpus Chaplasha.

Vern.—*Bengali*, Chaplash; *Burmese*, Toungeingnai.

A lofty deciduous timber tree of Eastern Bengal, Burma, and the Andaman Islands. The wood, used for making canoes, tea-boxes, and furniture, is said to get harder and heavier by storage.

***Artocarpus integrifolia.* Indian Jack Tree.**

Vern.—*Sanskrit*, Panasa; *Bengali*, Kanthál; *Hindi*, Panas; *Dakhini*, Fanas; *Tamil*, Palah-maram; *Telugu*, Panasa-kurra-podi; *Burmese*, Poingnai.

A large timber and fruit tree, found all over India, but common in Bengal, Burma, and South India. A full-grown fruit, often weighs 30 to 60 lbs.; when green, it is used as a vegetable and made into pickles. The fleshy substance around the white seeds in the ripe fruit is eaten raw and much relished by the natives; but, owing to a strong smell, it is not liked by many Europeans. The roasted seeds have a taste similar to the Spanish chestnut. In Sumatra the roots, cut into chips and boiled in water, produce a yellow dye, which is fixed by alum, and strengthened by the addition of a little turmeric; in Burma the priests wear yellow cloth dyed with it; in South India a yellow dye is produced from a decoction of the sawdust. Medicinally, the juice exuding from the trunk is applied externally to glandular swellings and to abscesses to promote suppuration; the tubers out of which the blossoms sprout are worn in the waist to cure hydrocele; the young leaves used in skin diseases, and the root in decoction given internally in diarrhoea. The leaves are also considered an antidote to snake-poison. A fibre, extracted from the bark, was sent to the Paris Exhibition from Sandoway; a cordage fibre is also obtained from the bark in Kumaun. The bark also yields a very dark-looking gum, soluble in water, which is, however, not useful for any economical purpose. The wood is much valued, and is suitable for making boxes, furniture, &c., and is exported to Europe for cabinet-work.

***Artocarpus Lakoocha.* Small Jack.**

Vern.—*Sanskrit*, Lakucha; *Bengali*, Dephal; *Hindi*, Barhal; *Dakhini*, Low; *Telugu*, Kammaregu; *Burmese*, Mi-ou-louke.

A tree common in Bengal and Burma. The sub-acid fruit is eaten

and also made into pickles. The root yields a yellow dye, and a cordage fibre is obtained from the bark. A dark-looking gum is obtained from the bark, but not used for any economical purpose. The wood seasons well, and is suitable for cabinet-work.

Dye.
Fibre.
Timber.

Arum campanulatum. See *Amorphophalus campanulatus*.

Arum colocasia. See *Colocasia antiquorum*.

Asparagus racemosus.

Vern.—Sanskrit, Bengali, Satamuli; Hindi, Satāwar; Telugu, Challa.

A small climbing plant, with fragrant flowers, found all over India. Root used medicinally, considered refrigerent, demulcent, diuretic, aphrodisiac, antispasmodic, and alterative; employed chiefly in nervous and renal diseases. When administered in combination with sugar and honey, it is effectual in diarrhoea and dysentery caused by bilious disorders.

Medicine.

Asparagus sarmentosus. *Linear-leaved or Climbing Asparagus.*

Vern.—Hindi, Sufed-musli; Tamil, Tannir-vittan-kiz; Telugu, Challa-gaddalu.

A climbing shrub, found in Upper India and the Dekhan. The root, which is long, white, and fleshy, is considered nourishing and aphrodisiac. Boiled with oil, it is applied to cutaneous diseases. It is often brought from China in a candied state. The root of *Bombax malabaricum* and *Hyposcis orchioides* is also sold in the market as *Sufed musli*.

Medicine.

Astercantha longifolia. *Long-leaved Barleria.*

Vern.—Sanskrit, Ikshugandha, Kantakalikā; Bengali, Hindi, Tālmakhānā, Tamil, Nirmuli; Telugu, Nigubi Veru.

An annual, found on moist lands all over India. The whole plant possesses tonic and diuretic properties; the seeds, called *Tālmakhānā*, are given in gonorrhoea; the root, in decoction, is administered in dropsical cases and gravel; the leaves are also used as a diuretic after being boiled in vinegar; and even the ashes of the dried plant are considered useful.

Medicine.

Astragalus hamosus. *Hook-pollled Milk Vetch.*

Vern.—Hindi, Tāj-bādhāhi, Katilā.

An annual, found in Beluchistan, Sind, and the Punjāb, belongs to the genus of plants which produce the gum tragacanth of commerce. Tragacanth possesses emollient and demulcent properties, and is useful in the irritation of the mucus membranes, specially the pulmonary and genito-urinary organs. By dyers and calico-printers it is employed as an adjunct to dyeing substances, for producing a glaze on the coloured stuffs.

Medicine.

Dye.

***Anicklandia costus.* ~~Costus~~ Root. (Reduced to *Saussurea Lappa*.)**

Vern.—*Sanskrit*, Kúta; *Persian*, Kust-i-hind; *Bengali*, *Hindi*, Pachak, Kút; *Tamil*, Kustam; *Telugu*, Changlé.

An annual, native of the southern slopes of the Himalayas, especially near Kashmir. Dr. Falconer has identified this plant to be the source of the *Costus arabicus* of the ancients, used as an incense in the temples. It forms also an ingredient for hair-powder. Medicinally, it is considered a bitter, aromatic tonic, used in fever; also stomachic, depurative, and aphrodisiac. A preserve made of it is reckoned wholesome and nutritious. Mr. John Smith, in his "Dictionary of Economic Plants," however, identifies the costus root with the produce of another plant. He states:

"Costus of the ancients has of late been ascertained to be the roots of *Aplotaxis auriculata*, a strong-rooted perennial plant of the composite (compositæ) family, a native of Kashmir, having a flowering stem attaining 5 or 6 feet in height, bearing heads of purple-coloured flower-like thistles, on the apex of the branches. Its roots are extensively collected, it is stated, to the amount of 2,000,000 lbs. a year, forming an important article of trade. It is conveyed to Bombay, and thence shipped to the Persian Gulf, Red Sea, and China. Its chief use is in perfumery, and in China is burnt in the temples and used medicinally to excite appetite. In Kashmir it is not much used except to keep away insects from shawls. It is known by the name of *kút* in the bázárs."

The sample sent is the substance known as "kút" in the bázárs.

***Avena sativa.* Oats.**

Vern.—*Hindi*, Jai.

The cultivation of oats has only lately been commenced in this country around military cantonments and Government stud depôts, where there is a large demand for nourishing fodder. In the year 1880-81, the area under oats in the 30 temporarily-settled districts of the North-Western Provinces was 9,781 acres. It is also grown in small quantities in the Kumaun Himalayas for local consumption.

***Averrhoa Carambola.* Carambola Tree.**

Vern.—*Bengali*, Kámrangá; *Hindi*, Karmal; *Dakhini*, Khamrak; *Tamil*, Tamartamaram; *Telugu*, Karomonga.

A small tree, 15 to 20 feet; native of Ceylon and the Moluccas, now cultivated in gardens in Bengal, Burma, and South India. The fruit is made into syrup, pickled or preserved in sugar. In Burma, cooked in curries, it is highly relished as a wholesome dish. The acid leaves are considered a good substitute for sorrel. The leaves, the root, and the fruit are used as a cooling medicine. The fruit is also used as an acid in dyeing.

Fruit.

Medicine.
Dye.

***Azadirachta indica.* See *Melia Azadirachta*.**

B

Babui grass. (Unidentified.)

This grass is widely distributed throughout Bengal, where strong ropes and strings are made of it. It is also suitable for the manufacture of paper.

Badhaborodh. (Unidentified.)

A medicinal substance purchased at the Calcutta market; use not known.

Baila grass. (Unidentified.)

Found in Oudh and the Sub-Himalayan regions. It is largely used in the manufacture of paper by the Upper India Paper Mill Co. of Lucknow.

Bakomba. (Unidentified.)

A medicinal substance purchased at the Calcutta market, use not known.

Baksha grass. (Unidentified.)

Found in the marshes of Bengal, used as a green fodder in the rainy season.

Balsamodendron Mukul. *Gum Bdellium Tree.*

Vern.—Bengali, Hindi, Guggul, Mukul.

A small tree, 4 to 6 feet; native of Western India and Rajputana.

The produce of this tree, as also of *B. Agallocha*, *B. pubescens*, &c., is the gum resin bdellium of commerce, which is used as an incense and a medicine. It is found in brittle masses of a red, yellow, or brownish colour, sometimes transparent, with a bitterish, balsamic taste, like myrrh; is soluble in potash, and contains resin, gum, bassorine, and a volatile oil. It is often used as a substitute for myrrh, and possesses similar medicinal virtues. Guggul is used in native medicine as a demulcent, carminative, and alterative, and is considered specially useful in leprosy, rheumatism, and syphilis disorders. When applied externally to boils and abscesses, it acts as a powerful resolvent; in ulcerous mouths it forms a valuable gargle.

Balsamodendron pubescens, a native of Sind, also yields the gum bdellium which is used for similar purposes.

Balsamodendron Myrrha. *Myrrh.*

Vern.—Sanskrit, Bola; Bengali, Hindi, Hirabol.

A tree, native of Arabia and Africa. The gum resin obtained from this tree is the celebrated myrrh of commerce, of which, according to Dr. Pereira, there are three varieties. From ancient time myrrh has been

Medicine.

burnt in temples as an incense. Medicinally it is bitter, acrid and aromatic, and is largely used as an expectorant in chronic coughs, and as an emmenagogue in irregular menses. Externally used as rubefacient, in combination with some irritant oil, on painful parts; it forms also a valuable gargle in ulcers of the mouth.

Bambusa arundinacea. *Bamboo.*

Vern.—*Sanskrit*, Vansa; *Persian*, Nai-hindi; *Bengali*, *Hindi*, Bāns; *Tamil*, Mangil; *Telugu*, Malkas.

Mats, &c

The bamboo is found almost everywhere in India, and is one of the most useful of Indian plants. The frame-work and the posts of the village huts in Bengal are entirely made of bamboo. Baskets, mats, chairs, ladders, masts of vessels, bed-posts, fishing-rods, spears, carts, and all sorts of household furniture are made of it. The young shoots, when tender, are eaten as a vegetable.

Vegetable.

Paper stock.

Different species of bamboo grow wild in almost all the mountainous tracts in India and Burma, and various proposals have from time to time been made to utilise them as a paper-making material, but no satisfactory result has yet been achieved in this direction. Mr Routledge, in his paper on "Bamboo considered as a paper-making material," writes—

"Of all the fibre-yielding plants known to botanical science, there is not one so well calculated to meet the pressing requirements of the paper trade as bamboo, both as regards facility and economy of production, as well as the quality of the paper 'stock' which can be manufactured therefrom. Grown under favourable conditions of climate and soil, there is no plant which will give so heavy a crop of available fibre to the acre and no plant that requires so little for its cultivation and continuous production."

Mr. Atkinson states that

"attempts have been made in England to obtain from the bamboo a half-stuff or pulp for paper manufacture, but these have failed, chiefly from using the plant when it had attained to some degree of maturity, and the fibre had become extremely dense and the external skin hard and silicious. In this state the processes for softening the material and converting it into pulp by long-continued boiling or digesting in very strong solutions of caustic alkali at a high temperature were troublesome, expensive, and dangerous. Mr. Routledge will therefore take the young plant, and by a system of close plantations, well watered and systematically cropped, ensure successive growths available for preparation into stocks."

Sir J. D. Hooker, in his *Himalayan Journal*, describes a manufactory for making paper out of bamboo. He found the stems steeped in large water-tanks with a solution of lime for a length of time, after which they were taken out, and beaten on stones, until they became soft, and all the hard matter removed. The bamboo flowers once in 30 or 40 years in seasons of extreme drought, and this event is considered as a precursor of famine. The seeds are eaten boiled like rice. Medicinally the silicious deposit, called in *Hindi* Tabashir or Banslochan, *Tamil* Mungaluppu, *Telugu* Venduruppu, formed in the joints of the female bamboo, is considered efficacious in paralytic complaints, flatulency, and poisoning cases. It is also esteemed as a valuable nervine tonic. The root is considered

Food.

Medicine.

a diluent, the bark a specific for eruptions, and the leaves an anthelmintic and a powerful emmenagogue. A fungus growing at the root of the bamboo is esteemed as a valuable vermifuge.

Bang. (Unidentified.)

Specimens of the *bang* seed have been received both from Cawnpore and Kumaun. Muhammadan physicians use it as an aphrodisiac. The seeds also yield an oil by expression. Medicine.
Oil.

Banjowan. See *Ligusticum diffusum*.

Barley. See *Hordeum hexastichum*.

Barringtonia racemosa.

Vern.—Bengali, Samudraphal; Hindi, Ijjul; Tamil, Samudra-pallam; Telugu, Kanapa chettu.

A large handsome tree, found in Bengal and Southern India. The root and the bark are bitter, possessing virtues similar to that of cinchona, and are considered a valuable medicine for their deobstruent and cooling properties: the fruit is very efficacious in coughs, colds, and asthma: the kernels of the drupes, mixed with sago and butter, are given in diarrhoea, with ginger and lemon-juice, in tenesmus; and with milk, in jaundice and other bilious diseases: the seeds are aromatic, useful in colic, parturition, and in ophthalmia. Medicine.

Baru grass. (Unidentified.)

Found in the Bengal marshes; appears to be suitable for the manufacture of mats and paper; now used as a green fodder in the rains.

Basket-work.

Many places of India are famous for such work, among which Monghir in Bengal and Palghat in Madras are famous. Basket-work is generally made with rattan cane, bamboo, Munj, Sar, and other grasses, palm and date leaves, &c.

Bassia butyracea. *The Indian Butter Tree.*

Vern.—Hindi, Phulwa, Chiurā.

A tree, 30 to 40 feet; native of Kumaun and Nepal. The honey produced by bees feeding on the flowers of this tree is considered the best honey in Kumaun. A vegetable butter, of a delicate white colour, and resembling fine lard, is obtained by expression from the seeds, which melts at 120° F. It is used as a lubricant in rheumatism, and as a cold cream and lip salve. The cakes left after the expression of the oil and the sweet insipid pulp of the fruit are edible. The seeds also contain a large proportion of saccharine matter, from which sugar is manufactured in Kumaun. Oil.
Medicine.
Food
Saccharine.

Descriptive Catalogue of Indian Produce

Bassia latifolia. *Mahua Tree.*

Vern. —Sanskrit, Madhuka; Bengali, Hindi, Mahua; Tamil, Kát elupe; Telugu, Ipi.

Food.	A large tree, 40 feet; found in the forests of Western Bengal and Central India, also cultivated in the North-Western Provinces and Oudh. The tree is very valuable on account of its flowers, which, preserved by drying, form an article of food to the poorer classes, especially of the wild tribes inhabiting the forests of Central India. The flowers are sweet, but, owing to a very strong smell, are not relished except by those accustomed to their use. A first-class tree often yields more than 20 cwts. of flower.
Oil.	An ardent spirit is manufactured from them, which is largely consumed by those classes of the people who have no caste objection to the use of spirituous liquors. The Mahua flowers should attract the attention of European spirit manufacturers. Major Drury states that the Mahua spirit, if carefully distilled, resembles good Irish whisky in taste. An oil is obtained by expression from the seeds, which is used for burning in lamps, as well as for adulterating <i>ghi</i> (clarified butter). It is also suitable for the manufacture of soap.
Medicine.	Medicinally, a decoction of the flowers is given in coughs; the spirit used as a stimulant; the kernels as a demulcent; and the oil applied externally as an emollient.
Timber.	The wood is strong and was tried as railway sleepers in the Central Provinces.

Bassia longifolia. *Wild Sapota Tree.*

Vern.—Tamil, Illuppai; Telugu, Ippa; Burmese, Kan-zan.

Food.	A species of the above tree, found in Southern India. The flowers of this species are more fleshy, and are eaten as food after being roasted, as well as the skins of the fruit, boiled to the consistency of jelly.
Oil.	The oil obtained from the seeds is used as a lamp oil, in the manufacture of country soap, and as a substitute for <i>ghi</i> (clarified butter) and cocoanut oil in cooking curries and making sweet-cakes. Dr. Balfour states that the seeds contain about 30 per cent. of oil, which is of a bright yellow colour, and that it may form an important article of export, as it makes good candle and soap.
Medicine.	Medicinally, a decoction of the bark, the leaves, and the green fruit is employed as an astringent and emollient, and also in the cure of itch and rheumatic affections; the oil is applied externally for skin diseases. The cakes left after the expression of the oil are used in washing the head, for which purpose they are exported to places where the tree does not grow.

Batatas edulis. *Sweet Potato.*

Vern.—Bengali, Shakarkand or Ranga Alu; Hindi, Shakarkand; Tamil, Vulli-kiz-hangu; Burmese, Kazwon.

Food.	A perennial creeper, originally a native of the Indian Archipelago, now cultivated all over India for its edible roots, which are sweet and palatable, and considered very nourishing. There are two varieties, the red
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and white. The tender shoots are also eaten as a vegetable, and the leaves are greedily eaten by cattle. The tubers contain a large proportion of starch. The roots are slightly laxative.

Medicine.

Batatas sp. (Sankálu). See *Pachyrhizus angulatus*.

Bauhinia purpurea.

Vern.—*Bengali*, Rakta-kānchan; *Hindi*, Kaliar; *Tamil*, Pedda-mē; *Telugu*, Kānchan; *Burmese*, Mahalay-kani.

An ornamental tree, 20 to 30 feet; found in Bengal, Burma, North-Western Provinces, and South India. Buds eaten as a vegetable. Bark used for dyeing and tanning. Medicinally, bark astringent, root carminative, flowers laxative; bark or root and flowers, mixed with rice-water, used as maturant for boils and abscesses. The tree also yields a gum, called *semki-gond*. A fibre is extracted from the bark, of which a sample has been received from Madras.

Vegetable.
Dye.
Medicine.

Gum.

Fibre.

Bauhinia racemosa.

Vern.—*Sanskrit*, Vanarāja; *Bengali*, Banrāj; *Hindi*, Mauvil ghila; *Burmese*, Bevijin.

A magnificent creeper, found all over India and Burma. A strong cordage is made from the inner bark, but does not last long if kept constantly in water.

Fibre.

Bauhinia tomentosa. *Darwin Mountain Ebony; Yellow Bauhinia.*

Vern.—*Sanskrit*, Usamaduga; *Tamil*, Katatti; *Burmese*, Ma-ha hlæ-ga-wa.

A large shrub, 12 feet; native of South India. The dried leaves and buds are given in dysentery; a decoction of the root-bark is considered useful in liver complaints and as an anthelmintic; the bruised bark is externally applied on tumours and wounds. A cordage fibre is extracted from the bark, of which a sample has been received from Madras.

Medicine.
Fibre.

Bauhinia VahlII.

Vern.—*Hindi*, Malda; *Dakhini*, Chambuli; *Telugu*, Adda.

A large climbing shrub, 40 to 50 feet; native of the Himalayas and the hilly districts. The seeds have a sweet, astringent flavour, eaten fried in clarified butter. The creeper in its natural state is used for suspension bridges over hill streams in the Himalayas, and a fibre, called *selu*, is manufactured from the bark, for which purpose it is first boiled and then beaten with a mallet, to render it soft and pliant. The leaves, which are a foot in length and breadth, are made into umbrellas and baskets by being sewn together with twigs, and also used for thatching. The kernels are said to possess tonic and aphrodisiac properties.

Food.

Fibre.

Medicine.

Bears grease.

A small sample has been sent from the Kumaun hills. The small quantity in which it is procurable only in certain wild parts of the country does not admit of its being an article of commerce. When obtained it is burnt in lamps by the poor people, or medicinally used as an emollient in rheumatism.

Beaver skin.

A small skin, said to be of beaver, has been sent from Kumaun. The article is not very important, as it can be procured only in small quantities.

Bena grass. (Unidentified.)

Found in the marshes and rice-fields of Bengal in the rainy season, used as a fodder.

Benincasa cerifera.

Vern.—*Bengali*, Kumrá, *Hindi*, Konra, Pethá, *Tamul*, Kumbuli; *Telugu*, Budidi gummati.

Food.
Medicine.

A climbing or prostrate plant, cultivated all over India for its fruit; eaten cooked in curries or made into sweetmeats. Medicinally, the fruit is considered alterative and highly styptic, useful in pulmonary and venereal disorders, and popularly known as a valuable antimercurialis; the water which exudes from the ripe fruit given internally, and a slice of the fruit applied externally to the temples, will stop bleeding from any of the internal organs. Native physicians condemn the use of the very tender fruit. A wild variety, called in Bengal *Tit nau*, is poisonous.

Berberis aristata and Berberis Lycium. *Indian or Nepal Barberry.*

Vern.—*Bengali*, *Hindi*, Chitra, Darhaldi, Rasaut, Kashmal; *Persian*, Zirishk, Chitra.

Medicine.
Dye.

Fruit.
Oil.

A spinous shrub, native of the Himalayas and the Nilgiris. The extract, *Rasaut*, obtained from the bark and wood, is largely used by the native practitioners as a tonic, and a remedy for ophthalmia. A yellow dye is obtained from the root, chiefly used in colouring leather. The berries are dried for currants and brought to the plains, where they are sold under the name of *Zirishk tursh*, or acid currants. An oil is also extracted from the seeds. The average annual export of *Rasaut* from the Kumaun hills does not exceed 5 cwts.

Berrya Ammonilla. *Trincomali Wood.*

Vern.—*Burmese*, Petwoon.

Fibre.
Timber.

A large tree, native of South India, Burma, and Ceylon. The bark yields a fibre, of which a sample has been received from Burma. The timber is strong, and used for carts, agricultural implements, &c.

Beta vulgaris and **B. vulgaris**, var. **orientalis**. *The Bengal Beet.*

Vern.—*Bengali*, Bit Palang.

Largely cultivated in Bengal and Upper India and used like spinach. Vegetable.
The seeds are used as a cooling medicine. *B. vulgaris*, the common Medicine.
beet, is also cultivated for spinach and for its root

Betula Bhojpattra. *Indian Paper Birch.*

Vern.—*Sanskrit*, *Hindi*, Bhurja, *Bengali*, Bhurjipatra, *Telugu*, Barjapatri chettu.

Native of the Himalayas. In ancient times the bark was used as Fibre.
writing paper. It is at present used for packing, making umbrellas,
covering thatches, and for hukka tubes.

Bhabar grass. (Unidentified.)

This grass is very common in the Sub-Himalayan regions, and is used Fibre.
in making ropes and strings. It is suitable for the manufacture of paper.

Bhangira. (Unidentified.)

A spice sent from Kumaun. Probably the seeds of *Perilla ocimoides*, Spice.
from which an oil is expressed for culinary use. Oil.

Bhatui grass. (*Andropogon acicularis*.)

A common grass found in the fields of Lower Bengal, used only as a
todder in the rains. It also produces a very fine grain which is used for Fodder.
food in famine times. Food.

Bhauranda. (Unidentified.)

A medicinal substance sent from Kumaun. Medicine.

Bhekula. (Unidentified.)

A fibre sent from Kumaun. Fibre.

Bhetki.

A salt-water fish, found in the Ganges delta, sold in a dried state in the
Calcutta market

Bhola.

A fish, found in the rivers of Bengal; sold in a dried state in the Cal-
cutta market.

Bignonia suaveolens. (Misspelt "sativa" in the Classified List.) See *Stereospermum suaveolens*.

Billakand. (Unidentified.)

Probably *Barrages paniculatus*; used in medicine as a tonic, alterative, and aphrodisiac.

Bj. Orellana. Arnolto.

Vern.—Bengali, Hindi, Lutkan; Tamil, Kuragu; Telugu, Jafra, vittulu; Burmese, Thi-din.

A middle-sized tree, found in South India, Bengal, and Burma. It is cultivated in Mysor and Burma for the yellow dye which the pulp of the seeds yields; the Indian dye is, however, inferior to that of the West Indies. About 300,000 lbs. of this dye are annually imported into Great Britain. It imparts an orange colour to silk and cotton, but is not very permanent. Medicinally, arnotto is reckoned an astringent and slightly purgative, and is considered a good remedy for dysentery and diseases of the kidneys.

Blood-stones.

Samples sent direct from Bombay.

Blumea lacera.

Vern.—Bengali, Kukursungha.

A common weed; used as a febrifuge, and said to stop hæmorrhage.

Bœhmeria nivea.—*Rheea Grass*; *China Grass*; *Ramie*.

Vern.—Bengali, Riah; Hindi, Puia, Burmese, Goun.

A perennial, indigenous in China, Japan, Indian Archipelago, Burma, Assam, Eastern Bengal, and the Lower Himalayas. The plant has of late attracted considerable attention for its beautiful, soft, glossy fibre, suitable for the manufacture of textile fabrics, and which promises to be one of the most important of the economic products of India. The separation of the fibre from the stems is, however, at present very laborious and expensive, and a machine capable of facilitating this process is much wanted. In 1871 a prize of £5,000 was offered for any successful machine, and this reward was again renewed in 1877, and a competitive trial of seven machines was held at Saharanpur, but none of these were able to produce very satisfactory results.

What the Government of India required is—

“A machine or process capable of producing, by animal, water, or steam power, a ton of dressed fibre of a quality which shall average in value not less than £45 per ton, in the English market, at a total cost, including all processes of preparation and all needful allowance for wear and tear, of not more than £15 per ton, laid down at any port of shipment in India, and £30 in England, after payment of all the charges usual in trade before goods reach the hands of the manufacturer. The processes of preparation are to be understood to include all the operations required subsequent to the cutting of the stems from the plants in the fields, until

the fibre is in a condition fit to be packed for conveyance to the market. The machinery employed must be simple, strong, durable, and inexpensive, and should be suited for erection in the plantations where the rhea is grown. It must be adapted for treatment of the fresh stems as cut from the plant. The treatment of old stems offers certain difficulties, and the fibre prepared from them must, moreover, always be much more costly than the fibre produced from green stems. Except during the hot, dry weather preceding the rains, in Upper India (where the rhea grows best) it is very difficult to dry the stems that no fermentation or mildew shall occur. But during this season stems are comparatively short and the crop poor and stunted, unless it is artificially irrigated, and such greatly increases the cost of cultivation. In the rainy season plant is in fine condition, but at this season it is almost impossible to dry the stem in quantity without injuring the fibre, unless recourse is had to artificial means of desiccation, which greatly increases the cost of the material. It is therefore obvious that the attention of inventors should be given to the discovery of a process for the treatment of the green stems."

The leaves are suitable for the manufacture of paper.

Boerhaavia^a diffusa. *Spreading Hog Weed.*

Syn. — *B. diandra.*

Vern. — *Sanskrit*, Smadika; *Bengali*, Gadha purna, *Dakhini*, Tikri-ki-bhaji; *Tamil*, Mukaratto-kire; *Telugu*, Attika mamedli.

A troublesome weed, found almost all over India. Leaves eaten as a Vegetable. pot-herb. Root, given in infusion, is considered laxative, anthelmintic Medicine, and cooling.

Bolabach. *Hibiscus tiliaceus.*

A fibre obtained from the Sundarbans, not sold in the market.

Bombax Gossypium. *See Cochlospermum Gossypium.*

Bombax heptaphyllum. *See Bombax malabaricum.*

Bombax malabaricum. *Red Cotton Tree.*

Vern. — *Sanskrit*, Salmali; *Bengali*, Simul; *Hindi*, Simal; *Dakhini*, Sair, *Tamil*, Mul-ilava; *Telugu*, Mundla-buraga; *Burmese*, La-i.

A large tree, found all over India and Burma. A large quantity of cotton is every year obtained from the tree, which is chiefly used in stuffing pillows and mattresses. It is too short for the manufacture of textile fabrics, but is very valuable as a paper-material, and as such it deserves the attention of paper manufacturers. The inner bark yields a fibre suitable for the manufacture of rough cordage. The gum, called *mochras*, is a valuable aphrodisiac, and is efficacious as an external applicant to swellings of the limbs; the root is stimulant and tonic, and emetic in large doses; leaves employed as an aphrodisiac and in special diseases; in Java the bark is used as an emetic. The seeds also contain a large proportion of oil. The wood is not durable, and is used only for toys, Timber, scabbards, tea-chests, planks for light work, &c.

Fibre.
Gum.
Medicine.

Descriptive Catalogue of Indian Produce

Bomala. (Unidentified.)

A fish sold in the dried state in the Calcutta market.

Buri. (Unidentified.)

A fish sold in the dried state in the Calcutta market.

Bong, See Fishing Implements.

Bonglong. See Fishing Implements.

Borassus flabelliformis. *Palmyra Tree.*

Vern.—Sanskrit, Tāla; Bengali, Tāl; Hindi, Tār; Tamil, Panam maraṁ; Telugu, Tut i chettu.

Food.

Saccharine.

Intoxicant.

Fibre.

Timber.

Medicine.

The palmyra palm is common in Bengal, Behar, and South India, the various products of which are put to many economic uses. A Tamil poem of Ceylon mentions eighty purposes to which this tree can be put. The immature stone inside the green fruit is delicious to eat and considered cooling. The pulpy matter adhering to the fibres surrounding the stone in the ripe fruit, the sago-like substance found inside the head of the tree, and the kernel of the germinating seeds, are all eaten. The sweet juice drawn from the flowering spathes yields sugar, and by fermenting it an intoxicating liquor is made, which is largely drunk by the lower classes. An ardent spirit is also distilled from it. The leaves were formerly used like paper to write books on, and to this day they are used for this purpose in Orissa and Southern India, where an iron style is used to write upon them; in certain parts of Bengal young children use them to write the alphabet. They are also largely used for making fans, mats, baskets, bags, winnows, hats, umbrellas, and for thatching, &c. Very neat baskets of palmyra leaf are made in Madras. The fibres of the petioles of the leaves are used for making rope and twine. The wood is very hard and is used to make rafters, beams, &c. At Monghir it is used to make ornaments. Medicinally, the juice of the fresh petioles is given as a stimulant and antiphlegmatic, and is used by the native physicians as an adjunct of their stimulant drugs in the low stages of intermittent and remittent fevers. The ash of the dry spidan of barren trees is anti-acid and is largely used in heartburn; it also acts as a powerful blister, and therefore applied on enlarged liver and spleen in combination with some demulcent substance. The water inside the seeds of the green fruit is refrigerent and diuretic, and is given to check hiccup. The pulp of the ripe fruit is applied externally in skin diseases. Palm sugar is antibilious and alterative, and is used in hepatic disorders and gleet. The juice is diuretic and is prescribed in chronic gonorrhœa.

contributed to the Amsterdam Exhibition of 1883.

Borax. *Sodæ biboras.*

Vern.—Bengali, Sohága; Hindi, Suhágá; Tamil, Venkaram; Telugu, Niegaram.

It is chiefly brought from Thibet across the Himalayas on the backs of sheep and goats. The Californian borax is, however, now gaining ground in the Indian market. Borax is used in medicine as a lotion; as a mordant in dyeing, and by jewellers in soldering gold and silver ornaments.

Borondo grass. (Unidentified.)

Common in Bengal marshes; used as a fodder.

Fodder.

Boukkat. See Fishing Implements.

Brassica campestris. (Sinapis.) *Mustard.*

Var.—Dichotoma, Roxb., *The Black Mustard.* **Vern.**—Káli sarson.

Var.—Glaucia, Roxb., *Rapeseed, or Yellow Mustard.* **Vern.**—Pílá sarson.

Var.—Glaucia, Royle. **Vern.**—Láhi, Tarrá or Toriá, of Northern India.

The seeds of this species are perhaps the most important of all the Indian oil-seeds. They afford the oil with which the people cook their vegetables and fish, and which they burn in their lamp. The oil-cake is a very nourishing fodder and a valuable manure, chiefly used for sugarcane and potato. The seeds of the first two varieties are used as a spice, and also as a medicine.

Oil.

Fodder.

Spice.

Medicine.

Brassica juncea.

Vern.—Rai.

There are several varieties, some of which are cultivated for their leaves, used as a vegetable, and others for the seeds from which oil is expressed.

Oil.

Brassica nigra.

Vern.—Rai.

The seeds of this plant are chiefly used in medicine as poultices. The oil expressed from them is also used medicinally.

Medicine.

Oil.

Dried specimens of the genus *Brassica* will be found in the Herbarium presented by Mr. Duthie, Superintendent of the Botanical Gardens at Saharanpur, who has also kindly supplied a set of drawings.

Brassica oleracea. *Cabbage and Cauliflower.*

Vern.—Bengali, Kópi; Hindi, Gobi.

This useful vegetable has only recently been introduced from Europe and is now extensively cultivated near large towns, and is greatly esteemed as a vegetable.

Vegetable

Descriptive Catalogue of Indian Produce

Bassica rapa. *Turnip.*

Vern.—*Bengali, Hindi, Shālgām; Burmese, Mung-la-do-waing.*

Turnips are grown in many parts of the country, and used as a vegetable. The seeds are used in medicine. *B. rapa* is by the "Flora of British India" viewed as a var. of *B. campestris*.

Broussonetia papyrifera. *Paper Mulberry.*

Vern.—*Burmese, Mahlaing.*

Fibre.

Paper.

A small tree found in Burma. The tree is famous for its fibrous bark, from which a very fine white cloth is made in Otaheite, which is worn by the people there. It readily takes colour. A paper is made from the bark in China and Japan. A specimen of the fibre has been sent by D. Smeaton, Esq., C.S., Director, Department of Agriculture, British Burma.

Buchanania latifolia. *Ouddapah Almond.*

Vern.—*Sanskrit, Piyala; Bengali, Piyal; Hindi, Chiraunji; Dakkhini, Char; Tamil, Kât-manga; Telugu, Charapuppu; Burmese, Cen-lwon.*

Fruit.

Oil.

Tan.

Gum.

Medicine.

A moderate-sized tree, about 30 or 40 feet high, found in the forests all over India. The fruit is edible, has a sweetish sub-acid taste, and is an important article of food to the aboriginal tribes of Central India. The kernel is largely used in confectionery, and is also eaten roasted and mixed with milk. It yields a fine straw-coloured oil, which is, however, seldom extracted. The bark is used for tanning. The tree yields a gum, sometimes used in medicine as a specific for diarrhœa. The seeds are also used in medicine.

Bucklandia populnea.

Vern.—*Nepali, Pipli.*

Timber.

A large evergreen tree, native of the Eastern Himalayas, Khasia and Martaban hills. The wood is in great demand for planking and door and window frames.

Buffalo Hides.

Prepared buffalo leather has been supplied from the Government Harness and Saddlery Factory of Cawnpore. There is an extensive export trade in buffalo hides and horns.

Butea frondosa. *Downy-branch Butea.*

Vern.—*Sanskrit, Kinsuka; Bengali, Palash; Hindi, Dhak; Dakkhini, Pallas; Tamil, Parasa-maram; Telugu, Tella moduga; Burmese, Pouk pin.*

A small tree, with deep purple flowers, found all over India. Dr. Hooke states that "when in flower the *Dhak* tree is a gorgeous sight; the masse

of flowers resembling sheets of flames, their bright orange-red petals contrasting brilliantly against the jet-black velvety calyx." The dried flowers, called *tesu*, are used as a yellow dye. Dr. Roxburgh made several experiments to test their value in this respect, and the following are his remarks on this subject:—

"Infusions of the flowers, either fresh or dried, dyed cotton cloth, previously impregnated with a solution of alum and tartar, of a most beautiful bright yellow, which was more or less deep according to the strength of the infusion. A little alkali added to the infusion changes it to a deep-reddish orange; it is then dyed on prepared cotton cloth of the same colour, which the least acid changes to a yellow or lemon; these beautiful colours, I have not been able to render perfectly permanent. Amongst numberless experiments I expressed a quantity of the juice of the fresh flowers, which was diluted with alum water, and rendered perfectly clear by depuration; it was then evaporated by the heat of the sun into a soft extract; this proves a brighter water colour than any gamboge I have met with; it is one year since I first used it, and it remains bright. Infusion of the dried flowers yielded me an extract, very little, if anything, inferior to the last mentioned; they yield also a very fine durable yellow lake, and all these in a very large proportion."

The bark is also used for colouring blue and for tanning. A beautiful ruby-coloured astringent gum is obtained from the bark, which was at one time supposed to be the kino of commerce, and is now frequently substituted for it. It contains about 73 parts of tannin, 22 parts of gum with gallic acid and other soluble substances, and 6 parts of almost insoluble substance. The seeds are a very powerful anthelmintic, which can be advantageously substituted for santonine; the gum is used in diarrhoea and dysentery; the flowers are given to enciente women in cases of diarrhoea, and applied externally in orchitis. A rough cordage is prepared from the root-bark, which is also used for making paper. It is said that the seeds are eaten in famine times.

Gum.
Medicine.
Fibre.

Butter, Clarified. *Ghi*.

This article is largely used by the vegetarian Hindus. It is prepared by melting raw butter, chiefly of buffalo milk. There is an extensive inland trade in it.

Buxus sempervirens. *Boxwood*.

Vern.—Hindi *Pápri*.

An evergreen shrub or small tree, found in the North-West Himalayas. A specimen of the boxwood has been sent by the Forest Department. Mr. Gamble, in his "Timber Trees," has shown that there is no prospect of an export trade being established with Europe. Boxwood is used in Europe for engraving, turning, mathematical instruments, &c.

Timber.

C

salpinia Bonducella. *Bonduc* or *Fever Nut*.

Syn.—*Cæsalpinia bonduc*; *Guilandina bonduc*.

Vern.—*Bengali*, Kat-karanja, Nátáphal; *Tamil*, Gech-chakkay; *Telugu*, Gachchakaya; *Burmese*, Ku-lein-dza.

A scrambling shrub, found almost all over India, common in Bengal, Burma, and South India. The seeds of this plant have a peculiar appearance, irregularly round, white in colour, and very hard. The kernel inside the seeds is extremely bitter, and possesses to a great extent the febrifugal properties of cinchona. In disorders of the liver, the tender leaves are considered very efficacious, and the root is reckoned a valuable tonic in Amboyna. The natives of India have a prejudice against allowing the seed into their houses, from an idea that it causes social animosities. Dr. K. L. Day considers that the kernel of the seeds can be substituted for quinine in fevers and other malarious disorders. The seeds yield an oil, known as the Bonduc nut oil. They also contain a large percentage of starch, sugar, and resin.

Medicine.

Oil.

Cæsalpinia coriaria. *Divi-divi*; *American Sumach*.

A small tree, native of South America, introduced into India by Dr. Wallich in 1842, and now naturalised in Madras, Khandesh in Bombay, and at Cawnpore in the North-Western Provinces. The pods contain about 60 to 65 per cent. of pure tannin, which has proved to be a good substitute for sumach, a more valuable tanning material. It is used as such at the Government Harness and Saddlery Factory at Cawnpore. This is one of the exotic trees, the cultivation of which in India has been highly recommended. Dr. Bidie is of opinion that the pods may be used as an astringent medicine.

Tan.

Medicine.

Cæsalpinia Sappan. *Sappan-wood*.

Vern.—*Sanskrit*, Patanga; *Bengali*, Bakam; *Hindi*, Patang; *Tamil*, Vartaing; *Telugu*, Bakkapu; *Burmese*, Tein n'gyet.

A large tree, 40 feet high, native of Coromandel, Burma, Siam, and Amboyna. It grows freely without being cultivated in almost all parts of South India. It is one of the sources of the red or Brazil wood of commerce, but the wood of this tree is specially known as the Bakam or Sappan wood, and is extensively used in dyeing a red colour, which is, however, not very fast. It greatly resembles Logwood, differing, however, in the colouring principle, that of Sappan being brasilin, while that of Logwood is hæmatoxylin. With ammonia it produces a red colour, with salts of iron a black colour, and with sulphate of copper, alum, and cream of tartar, a blue dye, which does not fade. In Palghat it is largely used for dyeing mats, and is one of

Dye.

the ingredients of the red dye produced by Chay root in South India. Medicinally, a decoction of the wood is given as a powerful cathartic; **Medicine.** it is also considered astringent and may be substituted for Logwood.

Cajanus indicus. *Pigeon Pea.*

Syn.—*Cajanus flavus*; *Cytisus cajan*.

Vern.—*Sanskrit*, Adaki; *Persian*, Shakhull; *Bengali*, *Hindi*, Athar; *Dakhini*, Turva; *Tamil*, Thovaray; *Telugu*, Kandala; *Burmese*, Pai-yen'chyang.

An annual, 3 to 6 feet; cultivated all over the country, but extensively in Behar and the North-Western Provinces. It yields a valuable pulse, which is split, made into pudding and eaten with bread-cakes. There are many varieties, of which (*bicolor*) the *tur* is the most noted. The stalks are used for making mats and baskets. A decoction of the leaves is given in dysentery. **Food.**

Calamus Rotang. *Rattan Cane.*

Vern.—*Persian*, Rod; *Bengali*, *Hindi*, Bet; *Tamil*, Perambu; *Telugu*, Beta mu.

This plant, which grows in moist localities in Bengal, Assam, South India, and Burma, yields the best rattan cane of commerce. There are many forms, distinguished according to the thickness or thinness of the canes and other properties, and found in different localities. Rattan cane is split into strips and largely used in the manufacture of chairs, sofas, and light carriages. It is also made into strong ropes for dragging heavy weights, and for binding wild elephants. Baskets and boxes are made of thin entire canes and so also are peculiar boats seen on the Megna. The seeds and tender shoots are used as an article of food. A sample of a species of cane extensively used by the Garo people has been supplied by the Forest Officer, Garo Hills, Assam. **Matting.** **Food.**

Calotropis gigantea. *Giganti Swallowe Wort; Madar.*

Vern.—*Sanskrit*, Arka; *Bengali*, Akanla; *Hindi*, Madar; *Dakhini*, Akra; *Tamil*, Erukham; *Telugu*, Jilledu-chettu; *Burmese*, Mai-oh.

A small shrub, 6 to 10 feet; found in waste lands all over India. The different products of this plant can be put to various economic uses, but as yet no method has been discovered to work them cheaply. It yields a manna, called *madūr-ka-shakkar*; the dried milky juice which exudes from the plant can be prepared like caoutchouc and gutta-percha; the silky down contained in the pods is suitable for stuffing pillows and is made into paper, and is also capable of being spun into the finest yarn from which can be woven a sort of flannel-like cloth; and the fibre obtained from the stems, known as the bowstring hemp of India, is perhaps the strongest vegetable fibre known. In a comparison made between madār **Gum.** **Fibre.**

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Other fibres with a three-strand $\frac{3}{4}$ -inch rope, the following results were obtained:

	capable of sustaining	lbs.
Cocos nucifera,		224
Hibiscus cannabinus	" "	290
Sansevieria zeylanica	" "	316
Gossypium herbaceum	" "	346
Agave americana	" "	362
Crotalaria juncea	" "	407
Calotropis gigantea	" "	552

Medicine.

The milky juice and also the root are used medicinally as an alterative; and in the treatment of leprosy and other cutaneous affections.

Camellia theifera. See Tea.

Camphora glandulifera (*Nepal Sassafras*.) See *Cinnamomum glanduliferum*.

Vern.—Bengali, Sassafras.

Medicine.

Timber.

A tree of the Nepal Himalayas, which yields the sassafras bark of commerce. Sassafras bark is also obtained from America. It is considered stimulant and diaphoretic. The tree also contains solid grains of camphor in its wood. The wood is durable, used in Sikim for cabinet work, and in Assam for canoes and boat-building. It is being tried for railway sleepers.

Camphora officinarum. *Camphor*.

Syn.—*Laurus camphora*.

Vern.—Sanskrit, Karpura; Persian, Kafur; Bengali, Karpur; Hindi, Kafur; Tamil, Karuppuram; Telugu, Karpuram; Burmese, Parauk.

Medicine.

A large tree, native of China and Japan, yielding the camphor of commerce. Camphor is also obtained from *Dryobalanops aromatica*, a native of Sumatra, Borneo, and other islands of the Eastern Archipelago; it is produced from *Blumea densiflora*, a common weed found in the Tenasserim Province of Burma, and from *Cinnamomum glanduliferum*, a tree of the Nepal Himalayas, which yields the Nepal sassafras bark. *Camphora officinarum* produces the unrefined or crude camphor of commerce. It is obtained by boiling the chopped roots and wood. Crude camphor is then afterwards refined by distillation. The Borneo or Barus camphor is a product of the *Dryobalanops aromatica* found in a solid state in the crevices of the wood, and is collected by felling the tree. An essential oil is also obtained in hollows of the wood, which is afterwards artificially crystallised into camphor.

Oil.

Canarium strictum. *Black Dammer*.

Vern.—Tamil, Kongiliam.

Gum.

A tall tree of Southern India. It yields a black transparent gum, used medicinally and for other purposes. Dr. Bidie states that "it occurs in

contributed to the Amsterdam Exhibition of 1883.

stalactitic pieces, and one tree yields a large quantity. It as a substitute for Burgundy pitch in making plasters."

Canavalia ensiformis. *Sword Bean.*

*Syn.—*Canavalia gladiata.*

Vern.—Bengali, Makhan sim; Hindi, Safed or Lal Kadsambal; Tamil, Thamirai; Telugu, Tamma.

There are four varieties of this plant, distinguished from the colour of the flowers and seeds. It is cultivated for its esculent pod, which is considered very wholesome. Food.

Cane-sugar. *See Sugar.*

Cannabis indica. *See Cannabis sativa.*

Cannabis sativa. *Hemp.*

Vern.—Sanskrit, Ganjika; Bengali, Hindi, Ganja, Bháng, Charas; Tamil, Ganja; Telugu, Ganjai; Burmese, Bin.

An annual, 4 to 6 feet; found wild or cultivated. The plant yields a fibre, of which ropes, ships' cables, bags, &c., are made. In the plains it is generally grown for the narcotic products which it yields, and which are largely used by natives. The dried shrivelled and entangled flower-tops, called *ganja*, and the resinous juice, called *charas*, which exudes from the plant, are smoked like tobacco. The larger leaves and capsules, called *bháng* or *siddhi*, are macerated in water and made into a stimulating beverage, and extensively used by certain classes of natives, especially in Upper India. Fibre. Intoxicant.

Ganja is of great value in medicine, being used as a narcotic, anodyne, and antispasmodic. Largely prescribed in tetanus by Indian practitioners with greater success than any other remedy. Medicine.

Caoutchouc.

Is obtained from several plants in the forests of Assam and Burma, among which the following are the principal: *Ficus elastica*, *Willughbeia edulis*, *Urceola esculenta*, and *Urceola elastica*; but the first is the true India-rubber tree of India, of which there are extensive plantations in Assam. See Gamble, p. 336 et seq. The present supply is not large. The following quantities were exported during the five years ending 1880-81:—Gum.

	Cwts.
1876-77	1,526
1877-78	1,384
1878-79	120
1879-80	172
1880-81	246

frutescens. Chillies; Red Pepper.

Vern.—*Beng.* Lanka, *Hindi*, Lál murch; *Tamil*, Mollaghai, *Telugu*, Merapakaia.

Medicine.

Spice.

An annual, extensively cultivated throughout India, originally a native of South America. It owes its properties to an essential oil called capsaicin. In medicine it is used in typhus and intermittent fevers and dropsy, and as a stomachic. It is also an excellent rubefacient. It is largely used in cookery and as a condiment, and is exported in large quantities to England. The different kinds of chillies sent to Amsterdam have been labelled as *C. annum*, *C. frutescens*, and *C. purpureum* (clay model).

Cardamomum Amomum. *See Amomum Cardamomum.***Careya arborea.** *Cary's Tree.*

Vern.—*Hindi*, Kumbhi, *Tamil*, Púta-tammi, *Telugu* Budá-darmi, *Burmese* Bambu.

Fibre.

Timber

Fruit.

Medicine.

Gum.

A large deciduous tree, found in the Sub-Himalayan tracts, Bengal, Burma, Central and Southern India. The bark yields a fibre suitable for cordage, wood durable, used for agricultural implements, and now being tried as railway sleepers in Bengal; fruit, called *khúni*, is eaten in the Punjab. Medicinally, bark astringent, flowers given as a tonic after child-birth. The tree also yields a gum of which little is known.

Carica papaya. *Papaw Tree.*

Vern.—*Bengali*, Penpe, *Hindi*, Papaya, *Tamil*, Pappayi, *Telugu*, Boppayi, *Burmese* Thumbawthi.

Fruit.

Medicine

A small soft-wooded tree, originally native of South America, now cultivated all over India for its pulpy fruit, which is procurable throughout the year. The green fruit is eaten as a vegetable. A milky juice exudes from the green fruit which is considered a good medicine for ague and enlarged spleen, and has the property of softening tough meat. The green fruit is prescribed in piles.

Carissa Carandas. *Carrissa Bush.*

Vern.—*Sanskrit*, Karmuda, *Bengali*, Karamcha, *Hindi*, Karaunda, *Tamil*, Kalaka; *Telugu*, Kalvikaya.

Fruit.

A thorny shrub, growing wild in all parts of India, and cultivated in gardens. The fruit has a pleasantly acid taste, and is used in making jellies and pickles.

Carpets.

India has been famous for its cotton and woollen carpets from time immemorial. Carpets made two or three hundred years ago still retain the

brilliancy of their colour. The cotton carpets are of two kinds, — *Dar*, made at Mirzapur; and *Daris*, or *Satranjis*, made at Agra, Aligarh, Bareilly, and many other places. The principal seats of the manufacture of woollen carpets are Multan, Lahore, Amritsar, Jhansi, Mirzapur, and many of the Central Jails in the different provinces. Specimens of carpets have been received from Lahore, Amritsar, Aligarh, Agra, Mirzapur, Hazaribagh, Calcutta, galpur, and Tanna.

Carthamus tinctorius. Safflower.

Vern.—*Sanskrit*, Kamalottara; *Bengali*, *Hindi*, and *Dakhini*, Kusum; *Tamil*, Sendurgam, Kashumba; *Telugu*, Agnisikha; *Burmese*, Hshoo.

An annual, 1 to 2 feet; grown extensively all over India. The seeds are used as food for poultry, and also yield an oil used for burning in Oil lamps and for cooking, and supposed to be the principal ingredient of maccassar oil. In medicine, the seeds are considered laxative, and are also used in dropsy. The oil is used in rheumatism and paralysis. But the chief importance of the plant lies in its flowers, which yield a beautiful dye of various shades of colour, between red and yellow. The dye is obtained from the petals which contain two pigment principles, *viz.*, *safflower-yellow*, obtained by pounding and macerating the flowers with soda, and *safflower-red*, which is the dye of commerce. The colours produced by safflower are, however, not very fast. The Dacca safflower is the best in India, and ranks next to that of China.

A large quantity of safflower is yearly exported from India, but the trade has of late much decreased, owing probably to the discovery of aniline dyes.

During the five years ending 1880-81 the exports of safflower were as follows:—

	Quantity. Cwts.	Value. • £
1876-77	7662	30,467
1877-78	3698	14,880
1878-79	4977	18,671
1879-80	2411	18,145
1880-81	6675	35,115

Carum album. See Carum Carui.

Carum Carui. Caraway Seed.

Vern.—*Bengali*, Jira; *Hindi*, Zira; *Tamil*, Shimai-Shombu; *Telugu*, Shimai-Sapu.

The plant is cultivated for its seeds, which are largely used both as a spice and a medicine. Three kinds of this seed are sold in the market, — white, sample labelled *Carum album*, probably same as *Cuminum cyminum*; Siyah zira, or black caraway, sample labelled *Carum nigrum*; and Sah zira, the small variety. Medicinally they are considered carminative and stimulant.

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am Co. m. True Bishop's Weed; Lovage.

Syn.—Ptycho. *Alaman*

Vern.—Bengali, Jowán; Hindi, Ajowan; Tamil, Oman; Telugu, Omamu.

f Cultivated in many parts of India for its seeds, which are used as a condiment and in medicine. Dr. Bidie states that the seeds are antispasmodic and carminative of great value. A water and an oil are distilled from them which are given for cholera, colic, and indigestion.

Carum Roxburghianum.

Apium involucreatum has been reduced to *Carum Roxburghianum* in the "Flora of British India."

Caryophyllus aromaticus. Cloves.

Vern.—Bengali, Lavanga; Hindi, Long; Tamil, Kiramber; Telugu, Lavangalu.

The dried flower-buds, known as cloves, chiefly brought from the Moluccas, have been known in India from time immemorial. They are largely used as a spice. Medicinally they are considered a warm, dry remedy, given in fevers and general debility. In European medicine they are considered a stimulant carminative.

Spice.
Medicine.

Cassia alata. Ringworm Shrub.

Vern.—Bengali, Hindi, Dád Mardan; Dakhini, Vlayati agati, Tamil, Shimai agati; Telugu, Sima avisi.

A small shrub, said to have been introduced from the West Indies. The fresh leaves, bruised and mixed with lime-juice, are a specific for ringworm. They are also used in other cutaneous affections, and supposed to be a remedy in all poisonous bites. Internally, the leaves and the flowers are prescribed as a tonic.

Medicine.

Cassia auriculata. Tanner's Cassia.

Vern.—Hindi, Tarwár; Tamil, Avarai; Telugu, Tangedu.

A common shrub in Central and South India. The bark is one of the most valuable tanning substances of India. Mr. D. E. Hutchins, Assistant Conservator of Forests, Mysor, stated, in his report to the Government of India on dyes, that "in tanning its bark occupies in this country the position which oak bark does in Europe. It is also used in dyeing like myrabolams when an astringent is required to 'modify a colour.'" The price at Bangalor is about £6 per ton. Medicinally it is reckoned astringent. The seeds, powdered, are applied in ophthalmia.

Tan.

Dye.

Medicine.

Cassia Fistula. *Pudding Pipe Tree.*

Vern.—*Sanskrit*, Suvarnak; *Persian*, Khyari-chembis; *Bengali*, Sg. ar; *Hindi*, Amalt. Dhakini, Bhawa; *Tamil*, Konraik-ke; *Telugu*, Kela-kayalu.

A middle-sized tree, 20 to 40 feet; found all over India, and other parts of Southern Asia. The fruit yields a pulp, used as a laxative; and the bark of the root is also a strong purgative. The bark of the tree is used in tanning. The tree yields a gum. Medicine.
Tan.
Gum.

Cassia glauca. *Sulphur-flowered Cassia.*

Vern.—*Telugu*, Konda tantepu chettu.

A small tree, found in Burma and South India. Its bark and leaves are given in diabetes and gonorrhœa. Medicine.

Cassia Ligaea.

The cassia bark sold in the Calcutta market has been labelled as *Cassia Lignea*, the name by which it is generally known in commerce. It is now known to be the bark of *Cinnamomum Tamala*, variety *Albiflorum*. Cassia bark is used as an astringent medicine by European practitioners. Medicine.

Cassia occidentalis. *Round-podded Cassia.*

Vern.—*Bengali*, Kalkashandâ; *Tamil*, Peyâ-veri; *Telugu*, Kasindâ; *Burmese*, Kalan.

An annual; common as a weed in Bengal, South India, and Burma. The leaves and the seeds are used externally in cutaneous diseases. Medicine.

Cassia Sophera.

Vern.—*Hindi*, Banâr; *Dakhini*, Sari-kasondi; *Tamil*, Periya-takarai; *Telugu*, Paidi-tangedu.

A common shrub, found in the Himalayan Tarai, Bengal, Burma, and South India. The bark, leaves, and the seeds are used as a cathartic and as a remedy for ringworm. Medicine.

Cassia Tora. *Fetid Cassia; Oval-leaved Cassia.*

Vern.—*Sanskrit*, Prabanatha; *Bengali*, *Hindi*, Chakunda; *Dakhini*, Tarota; *Tamil*, Ushit-tagarai; *Telugu*, Tagarisha chettu; *Burmese*, Dan-ky-wai.

A common weed, grows all over India and Burma. The leaves are used as an aperient, and much used to adulterate senna. The leaves and the seeds are a valuable remedy in cutaneous affections, specially for ringworm: The leaves also yield a blue dye, which is fixed by lime-water. The seeds, now called Cassophy, are a good substitute for coffee. Colonel Sladen, the Commissioner of Arakan, writes— Medicine.
Dye.

“It has recently been discovered that the bean or seed of this plant, when roasted and ground, forms of itself an excellent substitute for coffee, and used as an adul-

mixed with coffee in the proportion of one part coffee, five parts *Cassia Tora*, or, as the preparation is now called in the London market, 'Cassophy.' It improves the quality and flavour of the coffee and adds considerably to its wholesome and digestive properties. Cassophy has been analyzed by Professor Atfield, Ph.D., F.I.C., and pronounced free from all deleterious or nerve-exciting properties. It can be landed and sold in Europe with considerable profit, at a price which is less than a third of the price paid for genuine coffee. In experimenting with the samples now forwarded, care must be taken to roast the bean until they are past the brown stage and become almost black without being burned. After roasting, grind and treat exactly as genuine coffee."

Cassia sp. Senna.

Vern.—Bengali, *Hindi*, Sonamukhi ; *Tamil*, Nilavirai ; *Telugu*, Nelatangedu.

Medicine.

The senna leaves of commerce are obtained from several species of *Cassia*, of which *C. elongata*, *C. lanceolata*, and *C. obovata*, are said to be the most important in India. Senna leaves are chiefly used as a purgative ; and are also given in habitual constipation, dyspepsia, derangements of the liver, and fever.

Cassophy. See Cassia Tora.

Casuarina equisetifolia. Beef Wood of Australia.

Vern.—*Tamil*, Chouk ; *Telugu*, Serva ; *Burmese*, Tinyu.

Tan.
Timber.

A large evergreen tree, cultivated all over India, except the North-Western Provinces and the Punjab. The bark is used in tanning leather. The wood is very durable.

Cedrela Toona. Toon, or Indian Mahogany Tree.

Vern.—Bengali, *Hindi*, Tun ; *Tamil*, Tunamarani ; *Telugu*, Nandi ; *Burmese*, Thitkado.

Medicine.

Dye.
Timber.
Gum.

A large tree, 60 feet high ; grows in all parts of India. The bark is a powerful astringent. It is used in fevers as a substitute for cinchona bark, and is also efficacious in diarrhoea and dysentery. The flowers yield a beautiful red or yellowish dye, which is used in Mysor for dyeing cotton. A red dye is occasionally extracted from the seed. The wood is largely used for cabinet-work. The bark yields a gum.

Cedrus Deodara. Deodar ; Himalayan Cedar.

Vern.—Bengali, *Hindi*, Deodar.

Medicine.
Oil

Perfume.
Timber.

A large tree, found in the Western Himalayas and Afghanistan. The aromatic wood is used medicinally as a carminative, diaphoretic, and diuretic. A dark, strong-smelling oil, of powerful antiseptic properties, is obtained from the wood, and a tar is obtained from it by destructive distillation, which is considered a remedy for ulcers. The wood is also burnt as an incense. The timber is the most durable of all Himalayan Conifers.

Celastrus paniculata. *Staff Tree.*

Vern.—Hindi, Malkangni; Tamil, Atiparich-cham; Telugu, Malapankata.

A scrambling shrub, common in all parts of India. The red seeds are used medicinally, principally for horses. In the human constitution they act as a warm and dry remedy, and are given in rheumatism, paralysis, and special diseases. An empyreumatic oil is obtained from the seeds by destructive distillation, which is applied externally. The leaves are also officinal.

Cement.

A curious kind of cement prepared from lac has been received from Birbhumi. It is chiefly used in joining shell ornaments. Two pieces of limestone joined by this cement have been sent to show its adhesive power.

Cephalandra indica.

Vern.—Hindi, Bimba, Kundri-ki-bel.

A creeping or climbing plant, found wild and occasionally cultivated in the submontane tract of the Himalayan regions. The ripe fruit is eaten cooked or raw. A specimen of the plant has been sent by Mr. Duthie, Superintendent, Botanical Gardens, Saharanpur.

Cerbera Odollam. *Odollam Tree.*

Vern.—Bengali, Dabur, Dakhur; Tamil, Kadama; Burmese, Ka-lwah.

A moderate-sized evergreen tree, found in the coast forests of India and Burma. An oil obtained from the seeds is used in burning. A fibre obtained from the bark has been furnished by the Forest Department, Madras.

Ceriops Roxburghiana.

Vern.—Bengali, Garán; Burmese, Ka-by-ain.

A tree, which grows on the coasts of India and Burma, chiefly in the Sundarbans, where new lands are being formed by the deposit of silt from the Rivers Ganges and Brahmaputra. It was formerly one of the chief sources of fuel-supply in Calcutta. The bark is used in tanning leather.

Chachir. (Unidentified.)

A grass, found in the marshes and rice-fields of Lower Bengal. It is used as a fodder in the rains.

Chalk.

The white earth sent from Jaipur as chalk is said to be found in the State. Chalk is generally imported from England.

stone.

A sample of soap-stone has been sent from Jaipur under this name. It is used to write with on blackboards or on the floor. At Agra various kinds of toys, paper-weights, &c., are made of it.*

Chanda. (Unidentified.)

Name of a dried fish sold at the Calcutta market.

Chavica Roxburghii. *Long Pepper.*

Syn.—*Piper longum.*

Vern.—*Sanskrit, Pippuli; Persian, Fil-fil-undarāz; Bengali, Pipul, Hindi, Piplāmāl; Tamil, Tipili; Telugu, Pipul; Burmese, Pei-khyen.*

Medicine.

Spice.

This plant is extensively cultivated in South India, but also grows spontaneously on the river-banks in the Circar mountains, South Concan, Bengal, and Burma. The dried catkins from the female plant are used medicinally as an acrid, stimulant, and carminative. It is given with advantage in coughs, intermittent fever, cholera, and special diseases. Dr. Bidie states that in South India it is chiefly used as a condiment, and that it contains a volatile oil, an acrid resin and *piperinc*.

Chengrong javil. (Unidentified.)

Dye.

A dye used by the Garos, a hill tribe in Assam.

Chickrassia tabularis. *Bastard Cedar.*

Vern.—*Bengali, Chikrassi; Tamil, Aglaymaram; Telugu, Madagari vembu; Burmese, Yimma.*

Timber.

Dye.

A large tree, found in Eastern Bengal, Burma, and South India. The wood is used for carving and cabinet-work; the bark is a powerful astringent; and the flowers yield a red or yellow dye.

Chingri.

Vernacular name of prawns, sold in a raw or dried state in the Calcutta market.

Chloroxylon Swietenia. *Salin-wood.*

Vern.—*Hindi, Behra, Tamil, Mududād, Telugu, Billu.*

Timber.

Gum.

A moderate-sized tree, found in Central and South India. The wood is used for agricultural implements, furniture, picture-frames, &c. The tree yields a gum, of which a sample has been received from the Forest Department, Madras.

Chochra. (Unidentified.)

A grass, found in the marshes of Bengal; used as a fodder and also for thatching. Elephants are fond of it. It is also suitable for the manufacture of mats and paper. Fodder.

Chocolate ochre. See Ochres.

Chubbar fruit. (Unidentified.)

A sample of this fruit has been received from the Bhawalpur State. Fruit.

Chucho. (Unidentified.)

A grass, found in the marshes of Bengal, used as a fodder in the rainy season. Fodder.

Cicer arietinum. *G. am.*

Vern.—Bengali, Chhola; Hindi, Bút, Chaná, Tamil, Kadalay, Teluga, Sennaga; Burmese, Ka-la-pai.

This valuable pulse is cultivated as a winter crop all over India, and is largely used as an article of food by the people of Northern India. There are many varieties, large and small, white and brown. Large quantities of gram are brought down to the Calcutta market from Behar and the North-Western Provinces. It is eaten by the natives, parched, or parched and ground into flour, and also split and cooked. It is considered a nourishing horse-food. The green plants are eaten as a vegetable. The dried plants are a valuable fodder. Medicinally it is considered antibilious. Dr. Udai Chand Dutt states that the "acid liquid exuded from the hairs of the stem and leaves of *Cicer arietinum* is called *chanakamla* in Sanskrit. It is collected by spreading a cloth out on the plants during the night and rinsing the fluid absorbed by it. *Chanakamla* is described as acid, refrigerant, saltish, and useful in dyspepsia, indigestion, and costiveness."

Cichorium intybus. *Chicory.*

Vern.—Hindi, Kánni.

Grown in the Himalayas or found wild. The young plant is used as a vegetable. The root is given in dyspepsia and fever as a tonic and demulcent; fruit used as a cooling remedy for fever, headache, and jaundice. Medicine.

Cinchona.

Originally a native of South America, now acclimatised in the Darjiling Himalayas, chiefly through the exertions of Dr. King, Superintendent of the Royal Botanical Garden, Calcutta, and in the Nilgiris. Mr. Gamble gives the following history of its introduction into India:—

"The cinchona trees were first brought to India in 1860, chiefly through the labours

1859. C. R. Markham, C.B., who was sent by the Secretary of State in 1859 to Peru to collect plants and seeds of the different kinds. The plants he brought did not live, but the seeds were sown and the tree planted in the Nilgiri hills. In 1862, Dr. T. Anderson instituted the plantations at Rangbi in Sikkim with plants and seeds brought by him from Java. There are four principal species cultivated in the Indian plantations, viz., *C. succirubra*, *Calisya*, *officinalis*, and *micrantha*."

Dr. King has supplied samples of the bark of the first two species, as well as specimens of the febrifuge preparations extracted from them. Government cinchona preparations are not sold out of India.

Cinnabar. *Red Sulphuret of Mercury.*

Vern.—Bengali, Sindur; Hindi, Singarf.

Medicine.
Dye

Is chiefly brought from China. It is also artificially manufactured in Calcutta and other places. Mercury, obtained by sublimation of cinnabar, is used in medicine by the native practitioners. In the North-Western Provinces, it is said that cinnabar is used as a red dye.

Cinnamomum albiflorum. *See Cinnamomum Tamala.*

Cinnamomum Cassia. *See Cassia Lignea.*

Cinnamomum glanduliferum. *Nepal Camphor-wood.*

Vern.—Nepali, Malligiri.

Timber.

A large tree of the Eastern Himalayas, Khasia Hills, and Silhet. The wood is durable, used for canoes and boat-building in Assam, and for cabinet-work in Sikkim. *Camphora glandulifera* has been referred to this name in "Flora of British India."

Cinnamomum Tamala. *Cassia Cinnamon.*

Vern.—Hindi, Taj.

Spice.
Medicine.

A moderate-sized evergreen tree of the Himalayas and the Khasia Hills. The leaves, called *Tejpat*, and the bark, called *Trj*, are said to be the produce of variety *albiflorum*. The leaves and the bark are used for culinary purposes and also in medicine, and are considered hot and cardiac, given in colic, indigestion, and coughs.

Cinnamomum zeylanicum. *Cinnamon.*

Vern.—Bengali, Dálchini; Hindi, Dárchini; Tamil, Karu-puttai; Telugu, Sanna-lavanga-putta; Burmese, Thit-kyah-boh.

Spice.
Medicine

The cinnamon of commerce is the bark of this tree, a native of the Ceylon forests, but now cultivated on the western coast of that island. An inferior quality of cinnamon is obtained from China, but the Ceylon or Cayenne variety is reckoned superior. In India cinnamon is chiefly used as a spice. Medicinally it is considered heating and tonic.

contributed to the Amsterdam Exhibition of 1883.

Cissampelos Pareira. See Pari leaves.

Citrullus Colocynthis. *Colocynth Gourd.*

Syn.—*Cucumis colocynthis.*

Vern.—*Sanskrit.* Indra-varuni; *Bengali, Hindi, Mákl,* Indrayan, *Tamil,* Pey-komati; *Telugu,* Eti-puch-cha.

Common all over India. The Indian colocynth is considered a safe Medicine, purgative. The pulp of the fruit is used by native practitioners in biliousness, constipation and fever, and is said to possess bitter, acid, and cathartic properties. The root is also used as a cathartic medicine in various diseases.

Citrullus vulgaris. *Water-melon.*

Vern.—*Bengali, Hindi,* Tarbuza.

Cultivated in the Bengal and North-Western Provinces for its fruit, Fruit, which comes in season during the hot weather. The seeds are eaten parched with other grains, and are also used as a cooling medicine. Medicine.

Citrullus vulgaris, var. fistulosus.

Vern.—*Hindi,* Tind.

Cultivated in the Punjab; the gourd is eaten cooked. A specimen of Fruit, preserved plant has been furnished by Mr. Duthie.

Citrus acida, bergamia, limonum, &c. *Acid Lime; Citron; Lemon.*

Vern.—*Bengali,* Nebu; *Hindi,* Kagzi; *Dakhni,* Lembu; *Tamil,* Elimicham, *Telugu,* Gajanimma; *Burmese,* Than-ba-ya.

Many varieties of lime are found in India, the following being well known: *Páti nembu, Kógzi nembu, Gorá nembu, Chinna gora, Nárangí, Kamuráli nembu, Rangpur nembu,* and *Taka nembu.* The fruits of the Fruit, first two are preserved in salt and given in dyspepsia; the root is considered stomachic. Medicine,

The most important sample under this head is the lime-juice, preserved without the aid of spirit, by Babu Priya Lall Dey, son of Dr. Rai Kanny Lall Dey, Bahadur, F.C.S., the well-known chemist of Calcutta, who has furnished the following particulars about it:—

“Prepared from *Citrus acida* of Roxb. Comprises the well-known tropical varieties of *Pati* and *Gora nembu* or lime. This cordial offers in the smallest quantity all the properties of the citric acid combined with those vegetable principles of fresh lime-juice which have rendered it a sure and effective remedy against the effects of a long-con-

tinued, monotonous diet of dry meat and fish. It counteracts the evil effects of exposure to the extreme vicissitudes of an equatorial sun. It has been also found to be a most effective restorative for arctic and equatorial travellers. Under a peculiar and new process of preparation, the flavour and exquisite fragrance of the fresh lime have been preserved in the cordial. It keeps in any climate, and after several months' keeping seems to improve both in medicinal properties and refreshing virtues. It has never been seen to ferment. As an antiscorbutic it is the best remedy pronounced by the Faculty. An ounce of the juice mixed with half its weight of sugar and diluted forms a refreshing refrigerant antiscorbutic drink on board a vegetable-starving vessel. In cases of fever, gout, rheumatism, and certain forms of skin disease, repetition of this dose three or four times a day has been found to be an efficacious medicine. It is an indispensable requisite for the store of a ship."

He further states that "a trial of its preserving quality has been given by the Government of Bengal for upwards of a year, and no change has been noticed by careful analysis by the Government analyst.

A sample of lemon syrup has been sent from the Peacock Chemical Works. *See Tinctures.*

Citrus aurantium. *Orange.*

Vern.—*Bengali*, Kamlá nembu; *Hindi*, Sangtra, náraṅgi; *Tamil*, Kichili chechu; *Telugu*, Gajanimma; *Kittali-pandu*; *Burmese*, Than-ba-ya.

The orange is indigenous in the lime-soils of Silhet and the Nilgiris, but has now been introduced into many parts of India. Calcutta is chiefly supplied from Silhet, the fruits of which place are considered the best variety in India. Orange rind is bitter and aromatic, from which the tincture aurantium is manufactured.

Citrus decumana. *Pummalo.*

Vern.—*Sanskrit*, Paravata; *Bengali*, Batabi nembu; *Hindi*, Chakotra; *Tamil*, Bamba limas; *Telugu*, Bombari-massa chettu; *Burmese*, Shouk-tung.

A middle-sized tree, which produces the largest fruit of the orange tribe of plants, known by the name of shaddock in the West Indies. The fruit is cooling and aperient. The blossoms are used in flavouring sweet-meats.

Citrus limetta. *Sweet Lime.*

Vern.—*Hindi*, Sharbati nembu.

Cultivated in gardens in the North-Western Provinces and the Punjab. A clay model of the fruit has been sent from Lucknow.

Clay, black.

The sample of black clay has been obtained from Jaipur. Black-clay is used in calico-printing.

Clay images.

The clay images have been made by Babu Jadunath Pal, of Krishnagar, which place has long been famous for this art. Five life-size images have been sent, *viz.*, a cloth-seller, a grain-seller, a spice-seller, a cultivator selling vegetables, and a fish-woman with a child sucking sugar-cane beside her. The miniature models represent a cultivator ploughing his field, the shoeing of a bullock, a woman spinning, a fisherman casting net, a snake-charmer, a professional clubman who hires himself to fight for the Bengal landlords, a shoemaker at his work, and an aborigine digging his field. Besides these, a large number of models of fruits, vegetables, &c., have been obtained from Lucknow, of which the following is a list :—

Ægle Marmelos.
Allium Cepa.
Anomum aromaticum.
Ananassa sativa.
Anona squamosa.
Artocarpus integrifolia.
Artocarpus Lakoocha.
Averrhoa Carambola
Batatas edulis.
Benincasa cerifera.
Beta vulgaris.
Brassica oleracea.
Brassica oleracea var. caulo-rapa.
Brassica oleracea var. cauliflora.
Brassica rapa.
Capsicum purpureum.
Carissa Carandas.
Citrullus Colocynthis.
Citrus acida.
Citrus aurantium (variety).
Citrus aurantium „
Citrus aurantium „
Citrus aurantium (small variety).
Citrus decurvana.
Citrus limetta.
Citrus sp. (limbavariety).
Citrus sp. „
Colocasia antiquorum.
Colocasia antiquorum.
Cordia Rothii.
Cucumis Melo.
Cucumis Melo. (Momordica).
Cucumis sativa.
Cucumis utilissimus.

Curcuma longa.
Cydonia vulgaris.
Daucus Carota.
Dioscorea purpurea.
Eriobotrya japonica.
Eugenia Jambolana.
Feronia Elephantum.
Ficus Carica.
Fragaria vesca.
Grewia asiatica.
Grewia sapida.
Helianthus tuberosus.
Hibiscus esculentus.
Hibiscus Sabdariffa.
Jambosa vulgaris.
Lagenaria vulgaris.
Lagenaria vulgaris (variety).
Luffa acutangula.
Luffa acutangula (variety).
Mangifera indica.
Mimusops Elengi.
Mimusops Kauki.
Morus alba.
Morus nigra.
Momordica Charantia.
Musa sapientum.
Nephelium Litchi.
Phoenix dactylifera.
Phoenix sylvestris.
Phyllanthus Emblica.
Pisum sativum.
Prunus communis var. bokhariensis.
Prunus communis var. domestica.
Prunus persica.

Psidium Guava.	Tamarindus indica.
Pueraria tuberosa.	Terminalia Catappa.
Punica Granatum.	Trapa bispinosa.
Pyrus communis.	Trichosanthes anguina.
Pyrus Malus.	Trichosanthes dioica.
Raphanus sativus.	Vicia Faba.
Saccharum officinarum.	Vitis vinifera.
Solanum Melongena.	Vigna Catiang.
Solanum ovigerum.	Zea Mays.
Solanum tuberosum.	Zingiber officinale.
Solanum sp.	Zizyphus Jujuba.

Cleome Viscosa. See *Polanisia icosandra*.

Clerodendron infortunatum. (Viscosum.)

Vern.—Bengali, Bhânt.

Medicine.

A small plant, found as an undergrowth in Bengal. There are two varieties, *Desi bhânt* and *Bilâti bhânt*. The latter has probably been introduced. The whole plant is extremely bitter, and the leaves are considered an efficient anthelmintic.

Cocculus cordifolius. See *Tinospora cordifolia*.

Cocculus palmatus. *Calumba or Colomba Root.*

Medicine.

An imported article; used in medicine for its tonic, antiseptic, and astringent properties.

Coccus Cacti. *Cochineal.*

Vern.—Bengali, Hindi, Kirmdânâ.

Dye.

Medicine.

Cochineal is the dried body of the female of the insect *Coccus cacti*. The article is chiefly imported from America and Central Asia, but it is also gathered in small quantities in Rajputana and South India from the prickly pear (*Opuntia Dillenii*, &c.), which grows as a weed in many parts of the country. Cochineal is a valuable red dye. It is also used in medicine, and is supposed to possess anodyne and antispasmodic properties. It is believed that cochineal can be largely produced in India if the necessary measures are taken.

Coccus Lacca. *Lac.*

Lac is obtained from incrustations on the branches of various trees produced by the insect *Coccus Lacca*, which punctures the bark. The trees on which lac is mostly found are *Schleichera trifuga*, *Butea frondosa*, *Erythrina indica*, *Zizyphus Jujuba*, species of *Ficus*, &c.; that obtained on the tree first named, called *Kusumbi lac*, is highly prized. The incrustation called lac is formed by the female insect, and the bits of branches covered with it are termed stick-lac. These bits are then treated with

water, which process separates the lac from the twigs and reduces it to the form of small grains: it is now called seed-lac. Shell-lac is prepared by putting the seed-lac into a cloth bag, which is extended over a slow fire; when the lac inside it melts, the cloth is twisted hard so that the liquid comes out of the pores of the cloth and is allowed to drop on a plantain leaf put underneath. The glossy nature of the leaf causes the liquid lac to spread into thin layers, which, when cool, becomes the shell-lac of commerce. The liquid produced by treating the stick-lac with water is made into lac-dye by boiling down the coloured tincture into dryness and forming the residue into little cakes. Good lac-dye contains 50 per cent. of colouring matter, 25 of resin, and 22 of other extraneous substances. The exports of lac during the five years ending 1880-81 were as follows:

	Quantity.	Value.
	Cwt.	Rs.
1876-77	188,712	536,976
1877-78	104,645	362,048
1878-79	91,433	298,715
1879-80	71,048	371,495
1880-81	88,392	578,320

Cochlospermum Gossypium. *Golden Silk Cotton-tree.*

Syn.—*Bombax Gossypium*.

Vern.—*Hindi, Kúmbi; Tamil, Tanaku; Telugu, Gungu.*

A small tree of the forests of India and Burma. The tree yields the gum *katirá*, used as a demulcent in coughs and special diseases, and as a substitute for tragacanth. Gum.
Medicine.

Cocos nucifera. *Cocoanut Palm.*

Vern.—*Bengali, Narikel; Hindi, Nariyel; Tamil, Tenna; Telugu, Nari-kadam; Burmese, Ong.*

The cocoanut is one of the most valuable plants of the sea-coasts of India, Burma, and the tropical islands. All human wants can probably be supplied by this single tree. The albumen is a nutritious food; the water inside the unripe fruit is an excellent beverage; the oil extracted from the dried albumen is used for culinary purposes and for burning in lamps; the oil-cake is an excellent manure; the sweet juice extracted from the flowering spikes is made into palm-wine and toddy, and from which a coarse sugar is also produced; the wood is used for making the frame-work of houses, posts, rafters, fences, shears, lathes, shingles, chairs, &c.; the leaves for thatching; the leaf-stems used as fuel; the shells made into hukkás, drinking vessels, pitchers, spoons, lamps, &c.; the thick fibre surrounding the fruit is the coir fibre of which strong ropes and mats are made;—in short, the uses to which the cocoanut palm may be put are innumerable. Medicinally, the green fruit is given as a refrigerent; the flowers as an astringent; the oil is an excellent substitute for cod-liver oil. As a valuable hair tonic, it is Fruit.
Oil.
Intoxicant.
Timber.
Fibre.
Medicine.

extensively used by the women in Bengal. A sample of perfumed coconut oil has been exhibited by Messrs. N. C. Dhole, of Calcutta.

Coffea arabica. *Coffee.*

Vern.—*Bengali*, Kafi; *Tamil*, Kápi; *Burmese*, Kahpi.

The coffee plant, originally a native of Abyssinia, was introduced into India in the last century, and extensive plantations have now been formed in the Nilgiris, Kúrg, and the mountainous slopes of other parts of South India. The decoction of the berries forms the well-known beverage coffee, largely used like tea as a stimulant all over the world. The following interesting history of the introduction of the coffee plant into India is quoted from Dr. Bidie's Paris Exhibition Catalogue:—

"Coffee was introduced into Southern India about two centuries ago by a Musalman pilgrim, Baba-buddin. This man, on his return from Mecca, brought a few berries in his wallet, and taking up his abode amid the fastnesses of the hills in Western Mysor, which still bear his name, planted them near his hut. From the trees raised thus by the Fakir, most of those cultivated in native gardens in Kurg and Mysor seem to have been derived. For a long time the culture was entirely in the hands of natives, but about 50 years ago it began to attract the attention of Europeans. Since that time the industry has been taken up by European capitalists, till at the present day there is an almost continuous chain of estates along the Western Ghâts, from the northern extremity of Mysor down almost to Tutikorin. Within the last two or three years a new species of the coffee plant, the *Coffea liberica*, has been attracting much attention, and is likely to develop quite a new industry. This plant, unlike the *C. arabica*, will only grow at low elevations, but this peculiarity will have the advantage of permitting its culture to be carried on in localities on the plains where land and labour are cheap, and where the export of crop and import of plant and manure will be easy and inexpensive. The culture of the Liberian tree is at present only in the experimental stage, but so far the success obtained promises a bright future."

The exports of coffee during the five years ending 1880-81 were as follows:—

	Quantity. Cwt.	Value. £
1876-77	302,489	1,345,821
1877-78	297,327	1,338,499
1878-79	346,186	1,543,642
1879-80	359,313	1,626,746
1880-81	309,357	1,599,668

Coix lachryma. *Job's Tears.*

Vern.—*Bengali*, Gargara; *Burmese*, Ka-le-thi.

Food.

Cultivated in Assam and Burma as a food-crop, but grows as a weed in the rice-fields of Bengal. The sample sent has been collected in Bengal.

Colocasia antiquorum.

Syn.—*Arum colocasia.*

Vern.—*Bengali*, Guri kachu; *Hindi*, Ghuya; *Tamil*, Shema-kalengu; *Telugu*, Chema.

Food.

Cultivated all over India for its tuber, which is used as food. The introduction of potato, however, has greatly decreased its cultivation.

Colocasia himalensis.

Vern.—*Hindi*, Ghuya, pindalu.

The root and the leaf are edible.

Food.

Condiments.

The following are the principal articles used as condiments in India:—

Allium Cepa.	Crocus sativus.
Allium sativum.	Cubeba officinalis.
Amomum Cardamomum.	Cuminum Cyminum.
Brassica juncea.	Curcuma longa.
Capsicum frutescens, &c.	Elettaria Cardamomum.
Carum Carui.	Fœnicum vulgare.
Carum copticum.	Murraya Kœnigii.
Carum Roxburghianum.	Myristica moschata.
Caryophyllus aromaticus.	Nigella sativa.
Chavica Roxburghii.	Papaver somniferum seed.
Cinnamomum Tamala var. albiflorum.	Piper nigrum.
Cinnamomum zeylanicum.	Pucedanum graveolens.
Coriandrum sativum.	Trigonella Fœnum-græcum.
	Zingiber officinale.

Conyza anthelmintica. *See* Vernonia anthelmintica.

Coonji. (A fibre not identified.)

Copper sulphate.

Vern.—Peacock colour, *Hindi*, Morthothia.
Blue „ „ Nilathothia.

Extensively manufactured in Jaipur and Lucknow; used in dyeing and in medicine. Dye.
Medicine.

Corchorus olitorius. Jute.

Vern.—*Bengali*, Pât.

Since the Crimean war, jute has become one of the most important articles of the export trade of Bengal. It is now extensively cultivated in Northern Bengal. Many jute factories have now been established near Calcutta. The following figures show the exports of raw jute during the five years ending 1880-81— Fibre.

	Quantity. Cwt.	Value. £
1876-77	4,533,255	2,636,646
1877-78	5,450,276	3,518,113
1878-79	6,021,382	3,800,426
1879-80	6,680,670	4,370,032
1880-81	5,809,815	3,934,029

Besides raw jute the value of jute manufactures exported during the same years was as follows :—

1876-77	.	.	.	.	.	.	.	.	719,477
1877-78	.	.	.	.	.	.	.	.	771,127
1878-79	.	.	.	.	.	.	.	.	1,098,434
1879-80	.	.	.	.	.	.	.	.	1,195,361
1880-81	.	.	.	.	.	.	.	.	1,130,671

Medicine.

The tender leaves of the jute plant are eaten as a vegetable, and the bitter leaves of another variety are used as an antibilious medicine.

Cordia angustifolia. See *Cordia Rothii*.

Cordia fragrantissima.

Vern.—*Burmese*, Toung-kala-met.

Timber.

A deciduous tree of Burma; produces a beautiful fragrant wood, which in 1878 sold in London at £4-10 per ton. Mr. Gamble states that it should be better known, as "it has a handsome grain, and its fresh, fragrant odour makes it very pleasant to use."

Cordia Myxa.

Syn.—*Cordia latifolia*.

Vern.—*Persian*, Sapistán; *Bengali*, Balphal; *Hindi*, Lasorá; *Tamil*, Vidi, verasu; *Telugu*, Pedda-boku; *Burmese*, Thanat.

Fruit.

Fibre.

A moderate-sized tree, found all over India. The fruit is edible; bark yields a coarse fibre suitable for rope and cordage and paper manufacture; the viscid pulp surrounding the seeds is made into bird-lime; the leaves are formed into plates and used for wrapping cigars in Burma; and the kernel is used for marking linen. Medicinally, the mucilaginous fruit is used as a demulcent and laxative, the bark as a mild tonic in fever, the leaves as an application for ulcers, and the seeds as a remedy for ringworm.

Medicine.

Cordia Rothii.

Syn.—*Cordia angustifolia*.

Vern.—*Hindi*, Gondi; *Tamil*, Narvilli.

Fruit.

Gum.

Fibre

Medicine.

A small tree, found in the dry zones of North-West and South India. The pulp of the fruit is edible; bark yields a gum; fibre of the bark made into ropes. Medicinally, the decoction of the bark forms an astringent gargle.

Coriandrum sativum. *Coriander Seed.*

Vern.—*Sanskrit*, Dhanyaka; *Bengali*, Dhahia; *Hindi*, Dhahia; *Tamil*, Kotamalli; *Telugu*, Dhanyalu; *Burmese*, Nan-nan.

Coriander plant is cultivated all over India for its seed, which, when

green, has a disagreeable smell; hence its name "coriander," from the Greek word *koris*, a bug. It is chiefly used as a spice in India, and exported to Europe, where an aromatic oil is distilled from it. The quantity of coriander seed exported in 1880-81 was 31,084 cwt., value £14,436. Spice. Oil.

In medicine, the seeds possess carminative, refrigerent, diuretic, tonic, and aphrodisiac properties. The fresh leaves are considered pungent and aromatic. Medicine.

Corundrum of Pipra.

The sample has been obtained by Mr. H. B. Medlicott, Superintendent, Geological Survey, from Pipra in the Rewa native state on the border of the Mirzapur district.

Mr. Medlicott states that at the mines it sells for 18 shillings a ton; supply inexhaustible; described by Mr. Mallet in Records, Geological Survey of India, Volume V, page 20 (1872); Volume VI, page 43 (1873).

Cotton manufactures. See also Textile Fabrics.

The cotton manufactures sent are chiefly chintzes manufactured at Lucknow, Farukhabad, Aligarh, Jaipur, &c., towels and napkins of Dinapur, the embroidered *Phulkaris* of the Punjab and coloured cloths of Bardwan in Bengal. Most of the chintzes are printed on English cloth, but the dyes used are of native origin, chiefly *indigo*, *Morinda tinctoria*, *Rubia cordifolia*, *Nyctanthes Arborescens*, *Cedra Toona*, &c. The cheap aniline dyes, however, are superseding the simpler vegetable dyes of India. *Phulkaris* are made by the peasant women in the Punjab. The Dinapur manufactures are for European use.

Cotton-stone.

A curious specimen of decomposed stone has been sent by Babu Amba Datt Joshi, of Kumaun. The stone by being rubbed is reduced to a cotton-like substance.

Cow grease.

This is an unimportant article; used locally in machines.

Creta (carbonate of lime).

Lime is made in India from shells, the limestone found in the different parts of the country and from the calcareous concrete known as "kunkur." Samples of "kunkur" received from Birbhum in Bengal, and Cawnpore, in the North-Western Provinces, have been sent with the "Mineral Substances." The present specimen of carbonate of lime has been sent by Dr. K. L. Dey with his collection of indigenous drugs of India.

Crocus sativus.

Vern.—*Sanskrit*, Kunkum; *Bengali*, Jafran; *Hindi*, Kesar, Zafran; *Tamil*, Kungu-mapu; *Telugu*, Kunkum apavu; *Burmese*, Than-wen.

Saffron is chiefly brought from Persia and Kashmir, and is used as a spice. It yields a yellow dye, but the price is too high to admit of its extensive use as such. It is prescribed in fevers, melancholy, and enlargement of the liver. In small doses it is stomachic, in large doses it stimulates the nervous system.

Spice.
Dye.
Medicine.

Crotalaria juncea. Indian Hemp.

Vern.—*Bengali*, *Hindi*, San; *Dakhini*, Janab-ka-nar; *Tamil*, Jenappa-nar; *Telugu*, jenapa-nara; *Burmese*, Pan.

Fibre.

Extensively cultivated all over India for its fibre, which is, however, not so soft as jute. Dr. Bidie states that the specimens of cloth made of it kept in the Madras Museum are pretty and strong. At Jaipur, paper is manufactured from coarse *san*. Seeds used to purify the blood in special diseases.

Medicine.

Croton Tiglium. Purging Croton.

Vern.—*Sanskrit*, Jayapala; *Bengali*, Jaypal; *Hindi*, Jamalgota; *Tamil*, Nervalam; *Telugu*, Nepala-vittulu; *Burmese*, Kanakho.

Medicine.
Oil.

A small tree, found almost in all parts of India, but not common. The seeds are a drastic purgative, not safe for weak persons; about 20 of them have been known to kill a horse. A brownish-yellow oil is obtained by expression of the seeds, which is so powerful in action that a single drop applied to the tongue ensures the full results. It is used internally in apoplexy and paralysis of the throat, and externally in rheumatism and indolent tumours. Croton is not mentioned in the Sanskrit Materia Medica; it was known in Europe in the 17th century. Dr. Bidie states that the revival of its use in English medicine was due to certain Madras medical officers.

Cubeba officinalis. Cubeb Pepper.

Vern.—*Bengali*, *Hindi*, Kabab-chini; *Tamil*, Val-milaku; *Telugu*, Taka-miriyalu; *Burmese*, Sinban-karawa.

Spice.
Medicine.
Oil.
Gum.

Cubebs are brought from Java and are chiefly used as a spice. Medically they are used in special diseases, their virtue being due to an essential oil which is obtained from the fruits by distillation with water. They also contain a neutral crystalline substance called *cubebin* and a resin.

Cucumis Colocynthis. Colocynth Gourd. See Citrullus Colocynthis.**Cucumis Melo. Melon.**

Vern.—*Bengali*, Kharmuj; *Hindi*, Kharbuza; *Tamil*, Vellari-verai; *Telugu*, Mulam-pandu.

Extensively cultivated in the North-Western Provinces on the beds of

the rivers on account of its fruit, which is largely used for food in the hot season. The seeds are made into sweetmeats, and are considered a cooling medicine. They also yield an oil.

Fruit.
Medicine.
Oil.

Cucumis Melo—Momordica.

Vern.—Bengali, Phuti; Hindi, Phut; Tamil, Kakari-kai; Telugu, Pedda-kai.

There are two varieties, one comes in season in the rains and the other in the hot weather. The fruits of both are largely used as food by all classes of the people. The seeds are used as a cooling medicine and also yield an oil.

Fruit.
Medicine.

Cucumis Melo—utilissimus.

Vern.—Hindi, Kankri.

Cultivated in Upper Bengal and the North-Western Provinces during the hot weather and the rains for its gourd-like fruit, which for some time forms an important article of food for the poorer classes. The seeds are considered cooling and also yield an oil.

Fruit.
Oil.

Cucumis sativus. Cucumber.

Vern.—Bengali, Sasá; Hindi, Khira; Tamil, Mulu-veleri; Telugu, Doza-kua.

There are two varieties, one a creeping plant cultivated in the fields during the hot season, and the other a climber cultivated in homesteads in the rains. The fruits of both are extensively used as food. The seeds are considered a cooling medicine and also yield an oil.

Fruit.
Medicine.
Oil.

Cucumis trigonus.

Vern.—Hindi, Bislombhi.

Found wild in the Kumaun Himalayas. Fruit eaten.

Fruit.

Cucurbita Citrullus. See Citrullus vulgaris.

Cucurbita Lagenaria. See Lagenaria vulgaris.

Cucurbita maxima. Squash Gourd.

Vern.—Hindi, Kadu; Tamil, Pushini-kua; Telugu, Gumaddikaia; Burmese, Shawep-la-yang.

Cultivated all over India for its fruit; eaten as a vegetable. The seed yield an oil, and are also used in medicine.

Fruit.
Oil.
Medicine.

Cucurbita Pepo. Pumpkin, or White Gourd.

Vern.—Bengali, Hindi, Kumra.

Cultivated for its fruit, which is eaten as a vegetable. Seed yields an oil.

Fruit.
Oil.

Cuminum Cyminum. *Cumin Seed.*

Vern.—Sanskrit, Jiraka; Bengali, Jirā; Hindi, Zirā; Tamil, Siragam; Telugu, Jiraka.

Spice.
Medicine.
Oil.

Extensively cultivated in Rajputana and other parts of Upper India for its seeds, which are chiefly used as a condiment. Medicinally they are regarded as aromatic, carminative and stimulant, and used in dyspepsia and diarrhoea. An oil is extracted from them which is used in medicine as a stimulant and carminative. In the Jaipur State of Rajputana a particularly good kind of cumin seed is grown.

Cupressus sempervirens. *Cypress.*

Vern.—Hindi, Sarā, Sarās.

Medicine.

A tall tree, cultivated in gardens in North-Western India; wood and fruit regarded as astringent and anthelmintic; the latter is prescribed as an aromatic stimulant in piles.

Cupressus torulosa. *The Himalayan Cypress.*

Vern.—Hindi, Gulla, Raissalla, &c.

Timber.
Perfume.

A large tree of the Himalayas. Wood much used for building purposes, and is also burnt as an incense.

Curculigo orchoides.

Vern.—Bengali, Hindi, Siyah mūsli; Tamil, Nilap-panāik-kizhangu; Telugu, Nelā-tāti-gaddalu.

Medicine.

Found in moist localities in the hills, one of the sources of the tuberous roots sold in the market under the name of *siyah mūsli*. It is considered a valuable medicine for special diseases. See also *Ancilema tuberosa*.

Curcuma Amada. *Mango Ginger.*

Vern.—Sanskrit, Karpura-haridra; Bengali, Amádā.

Spice.
Medicine.

Found wild in Bengal and the hills. The fresh rhizome smells like mango. It is used as a condiment, and is regarded as cooling and useful in prurigo.

Curcuma angustifolia. *Wild or East India Arrowroot.*

Vern.—Hindi, Tikhur.

Starch.
Medicine.

The wild rhizome called *Tikhur* is found in the hills, samples of which have been received from Palamow and the Central Provinces. *Tikhur* is used in medicine. The cultivated arrowroot (*Maranta arundinacea*) has been introduced into India, a sample of which has been contributed by Messrs. Speed and Co. of Alipur, near Calcutta.

Curcuma aromatica. *Wild Turmeric.*

Vern.—*Sanskrit*, Banharidrā; *Bengali*, Ban-halud; *Tamil*, Kasturi-manjal; *Telugu*, Kasturi pasupu.

The rhizome has an agreeable, fragrant smell, and a warm, bitter taste. Perfume.
It is said to possess tonic and carminative properties, and useful in skin Medicine.
diseases and disorders of the blood.

Curcuma longa. *Turmeric.*

Vern.—*Sanskrit*, Haridra; *Bengali*, Halud; *Hindi*, Haldi; *Tamil*, Manjal; *Telugu*, Pasupu.

Turmeric is cultivated all over India for its rhizomes, which are used as a condiment in cooking vegetables and meat. They are also extensively Spice.
used as a yellow dye; the colouring principle being known as *Curcumin*, Dye.
which is soluble in alcohol or ether, and changes with alkali into a deep red. Macerated turmeric is in some places rubbed on the body by women and is considered cooling. Native practitioners consider turmeric Medicine.
as stimulating; used for external application in pains and bruises, and for internal administration in disorders of the blood.

Curcuma Zedoaria. *Long Zedoary.*

Syn.—*C. Zerumbet.*

Vern.—*Sanskrit*, Bengali, Sati; *Hindi*, Kachurā; *Tamil*, Kich-chilik-kizhangu; *Telugu*, Kichlie-gaddalu; *Burmese*, Thānu-wen.

Found wild in moist forests. The rhizomes possess an agreeable Perfume.
smell, and aromatic, stimulant, and carminative properties: considered Medicine.
useful in fever and skin diseases.

Curry paste and Curry-powder.

Vegetable or meat cooked in a certain way is known as curry. The spices used in making curry are generally purchased by Europeans in a prepared state, either as curry-paste or curry-powder. There is a considerable trade in these stuffs. The ingredients used to make a curry-stuff are principally the following :—

Anise seed.	Nutmeg.
Allspice.	Cinnamon.
Cardamom	Coriander.
Cloves.	Cumin seed.
Fennugreek	Black pepper.
Garlic.	Mustard seed.
Ginger.	Chillies.
Mace.	Turmeric

Cuttle fishbone.

A sample of this has been sent under the name of "Sea-foam." It is used to make tooth-powder.

Cyamopsis psoralioides.

Vern.—*Hindi, Gowár.*

Cultivated in the North-Western Provinces as a rain crop. The legumes are eaten as a vegetable. The grain and dried legumes form a good cattle fodder. The grain is split and eaten cooked like other pulses.

Cydonia vulgaris. Quince.

Vern.—*Bengali, Bihidáná.*

Dr. Kanny Lall Dey has furnished the sample. He states in his "Indigenous Drugs of India" that the *Bihidáná* seeds are "imported from Kabul, Bokhara, and Asia Minor. They are highly valued by the Muham-madans as a demulcent tonic and restorative remedy. From the presence of a mucilage, which they yield to water, they possess the demulcent and emollient properties of mucilage of *acaciæ*."

Cynodon Dactylon. Creeping Cynodon.

Vern.—*Sanskrit, Durva; Bengali, Durba; Dakkhini, Hariáli; Tamil, Arugam-pullu; Telugu, Garika-kasuvu.*

Grows in moist localities all over India, and is a very useful fodder grass. It is imported into Calcutta in large quantities as hay. The grass is also suitable for the manufacture of paper. The juice of the green grass is considered a good remedy for dysentery.

Cynosurus coracanus. See Eleusine coracana.**Cyperus longum. See Cyperus rotundus.****Cyperus pertenuis. (Reduced to Mariscus cyperus.)**

Vern.—*Bengali, Hindi, Nagar motha.*

Found in moist places all over India; root used in medicine as diaphoretic, astringent, and stomachic; used in dyeing to give a scent to the cloth; also used as a perfume.

Cyperus rotundus.

Vern.—*Bengali, Hindi, Muthá; Dakkhini, Kore-ki-jhár; Tamil, Koray; Telugu, Shakha-tungu-veru.*

Found in moist places; root possesses an agreeable smell, and an aromatic taste, used medicinally as a diaphoretic and astringent. Dr. Bidie states that people use it for food in famine times.

Cyperus tegetum.

Vern.—*Bengali*, Mádurkāti.

The smooth, elegant mats, commonly found in Lower Bengal, are made of this sedge, which is cultivated in Midnapur, a district in the neighbourhood of Calcutta. The culms in the green state are split into two or three pieces, which in drying contract and become nearly round. The floors of houses in Calcutta are almost entirely covered with mats made of this sedge. The fine *Masland* mats are also made of this sedge.

Dalbergia latifolia. *Blackwood or Rosewood of Southern India.*

Vern.—*Bengali*, Hindi, Shisham; *Tamil*, Iti, eruvadi; *Telugu*, Jitegi.

A timber tree, which attains a large size in Kumaun, valuable for its timber, wood, which is exported to Europe for cabinet-work.

Dalbergia paniculata.

Vern.—*Hindi*, Dhobein; *Tamil*, Patchalai; *Telugu*, Potrum; *Burmese*, Tapoukben.

A large deciduous tree, found in the forests of the Himalayas, Central and Southern India, and Burma. The tree yields a gum of which a sample has been received from Madras.

Gum.

Dalbergia Sissoo. *The Sissoo Tree.*

Vern.—*Hindi*, Sisu; *Tamil*, Yette.

A large deciduous tree, found all over India. Until lately it has been extensively planted as an avenue tree on road-sides in the North-Western Provinces. The wood is very durable, extensively used in boat-building, agricultural implements, and furniture.

Timber.

Daphne papyracea.

Vern.—*Hindi*, Setbarua.

A large shrub, found in the Himalayas and the Khasia Hills. Two varieties of this plant are known in the Kumaun Hills, one with white flowers and yellow fruit, and the other with purple flowers and fruit of the same colour. From the bark of both the tough Nepal paper is made. Mr. Atkinson states:—

Fibre.

"The pulp manufactured from the *Daphne papyracea* yields materials for a paper that gives the engraver finer impressions than any English-made paper, and nearly as good as the fine Chinese paper that is employed for what is called India paper-prints. The paper made from the shrub in Kumaun is almost as strong and durable as leather, and is

largely used for village records and court proceedings. It is exported to Tibet on the north and to the plains on the south for manuscripts and account-books. With this wealth of raw material in existence, it is remarkable that so little has been done to render the fibre resources of our hills available to European enterprise."

The bark is also used to make ropes.

Date sugar. *See Sugar.*

Datisca cannabina.

Vern.—*Hindi*, Akalber.

Found in the Himalayas. The root is used to aid in dyeing a red colour; medicinally it acts as a sedative in rheumatism.

Datura fastuosa. *Black Datura.*

Vern.—*Sanskrit*, Dhusturá; *Bengali*, *Hindi*, Kálá Dhátura; *Tamil*, Karu-umate; *Telugu*, Nalla-ummetta; *Burmese*, Pad-daing-phu.

A small shrub, found all over India. It is with the seeds of this plant, mixed with sweetmeats, that travellers are stupefied and robbed. The seeds, leaves, and the root are all used in medicine. The seeds contain a large proportion of the alkaloid known as the *Daturine*, and are given as a narcotic anodyne in asthma, bronchitis, and emphysema; they are also considered useful in insanity and complicated fevers. Leaves are smoked to obtain relief in spasmodic asthma.

Datura Stramonium (alba). *White Datura.*

Vern.—*Bengali*, Sada dhaturá; *Tamil*, Ummatái; *Telugu*, Ummetta.

The White Datura possesses properties similar to the above, and native practitioners use the two indiscriminately.

Daucus Carota. *Carrots.*

Vern.—*Bengali*, *Hindi*, Gájar; *Tamil*, Gájjara kelangu; *Telugu*, Gajjara gadda.

Cultivated in many parts of India and used as food by the poorer classes. It saved a large number of people from starvation and death in the famine year of 1878, and, again, it materially helped to alleviate distress in the partial drought of 1880. Carrots are also made into sweetmeats. The leaves are good fodder for cattle. The seeds are reckoned a nervine tonic and also yield an oil.

Deer Skins and Horns.

Although deer are plentiful in many parts of India, the supply of horns and skins is very limited. The present samples have been obtained from Jaipur, Rajputana.

Desmodium gangeticum. See Sálpáni.

Dhadka grass. (Unidentified.)

A consignment of 200 lbs. of this grass has been sent from Manbhúm Paper stock by Mr. J. Deveria. The exhibitor states that the grass is an excellent paper material, and is anxious to have a fair trial from paper manufacturers. He states:—

“The grass could be procured, if required, in unlimited quantities; and if any paper-making firm will undertake to put up a mill on the spot where it comes from, arrangements could be made to give up all the land required for the mill premises free of rent or at a nominal rent for 99 years; and 5,000 acres of land would be laid out for the growth of the grass for the use of the mill so built. The yield from the 5,000 acres would most likely be about 2,500 tons of grass, and the cost of growing, cutting, and laying down on the mill premises would be about £1.5s. per ton. The grass would yield about 60 per cent. of paper, whence the mill could depend on turning out about 1,500 tons of paper. This at the wholesale rate of 6d. per lb. in Calcutta would represent an income of £84,000 per year; allowing a third for cost of manufacture, &c., would leave a clear profit of about £56,000 a year. The Bally mills, paying for their material from £3 to £4 per ton, are paying large dividends every year, and they have no material known to them (except the Dhadka grass that I first brought to their notice two years ago) that can be worked cheaply. These mills have a capital of £96,000, so that in two years by the above arrangement such a capital could be recovered.”

Dikan Jowan. (Unidentified.)

A native medicine, purchased at the Calcutta market.

Dillenia pentagyna.

Vern.—*Bengali*, Karkotta; *Tamil*, Rai, pennni; *Telugu*, Rawadán; *Burmese*, Zimbyún.

A deciduous tree of Bengal, Central and South India, and Burma. The leaves, which are large in size, are made into plates; the fruits and flower-buds are eaten when green. The wood is used for ship-building, rice-mills, &c.

Fruit.
Timber.

Dioscorea bulbifera. *Yam.*

Vern.—*Hindi*, Zaminkand; *Dakhini*, Karu karinda; *Telugu*, Malay-kayapendalam.

Cultivated for its root, which is used as a vegetable. It is also dried and powdered for external application to ulcers.

Food.
Medicine.

Dioscorea purpurea. *Sweet Potato of Pondicherry.*

Vern.—*Bengali*, Rakta-gurnia-alu; *Hindi*, Lal-gurnia-alu; *Tamil*, Pujathuschari vulle kelangu; *Telugu*, Desavali pendalam.

Cultivated for its tubers, which are eaten as a vegetable. A clay model has been sent.

Food.

Dioscorea sativa. *Common Yam.*

Vern.—*Hindi*, Ratalu; *Tamil*, Yamskollung.

Food.

Cultivated all over India for its roots, which are used as a vegetable.

Medicine.

The powdered tuber is applied to ulcers.

Dioscorea versicolor.

Vern.—*Hindi*, Genthī, Gajir, Ganjira.

Food.

A kind of yam found wild in the Kumaun Himalayas. It is a deliciously fragrant edible yam, and is considered a farinaceous food for invalids.

Diospyros embryopteris. *Gab.*

Vern.—*Bengali*, Gab; *Hindi*, Tendu; *Tamil* Tumbilik-kay; *Telugu*, Tubiki.

Tan.

A small tree, found all over India and Burma. Fishing-nets in Lower Bengal and Assam are tanned with an infusion of the unripe fruits to make them durable; it is also used as a tar in caulking the seams of fishing-boats. The unripe fruit and the bark abound in tannin, and as such deserve notice. Medicinally they possess astringent properties. A medicinal oil is also obtained from the seeds. The tender leaves of the tree are eaten as a vegetable; the fruit when ripe is sweet and edible, and children are very fond of it.

Medicine.

Oil.

Food.

Diospyros Melanoxylon.

Vern.—*Bengali*, Kend; *Hindi*, Tendu; *Dakhin*, Tumri; *Tamil*, Tumbi; *Telugu*, Tumi.

Timber.

A moderate-sized tree, found in the forests of India and Burma. The tree produces a durable wood used for building purposes, and an ebony used for fancy work and carving. The Bijnor wood-work is made of this wood. It also yields a gum. The fruit is edible, largely used by the jungle people in the hot season. The bark is astringent, used as a tonic in diarrhœa and dyspepsia.

Gum.

Fruit.

Medicine.

Dipterocarpus turbinatus. *The Gurjun Oil Tree.*

Vern.—*Bengali*, Garjun; *Burmese*, Kanyin-nee.

Timber.

A lofty evergreen tree, found in Eastern Bengal and Burma. The wood is used for house-building and canoes; but the tree is famous for its wood-oil, called Gurjun oil, which is used as pitch and varnish; and medicinally as an external application on ulcers, ringworm, and other cutaneous diseases.

Oil.

Medicine.

Dischrostachys ceneria.

A fibre has been sent from Madras under this name.

Dolichandrone falcata.

Syn.—*Spathodea falcata*.

Vern.—*Dakhini*, Mersinghi; *Telugu*, Udda, wodi.

A small deciduous tree of Central and South India. A fibre obtained from it has been sent by the Madras Forest Department. **Fibre.**

Dolichos biflorus. *Horse-gram.*

Vern.—*Bengali*, Kurti-kalai; *Hindi*, Kulthi, gahat; *Tamil*, Kollu; *Telugu*, Wulawuli.

Largely cultivated all over India for its grain, which is chiefly used as food for horses and cattle. People also occasionally eat it cooked like other pulses, but the grain is hard and indigestible. **Food.**

Dolichos Catiang and **sinensis.** *See Vigna Catiang.*

Dolichos Lablab. *Black-seeded Kidney Bean.*

Vern.—*Hindi*, Simi; *Dakhini*, Bullur; *Tamil*, Mutchri-kottay; *Telugu*, Anu-mulla.

Cultivated in the North-Western Provinces for its seeds, which are eaten with rice cooked like other pulses. The green legumes are also eaten as a vegetable. **Food.**

Dolichos pruriens. *See Mucuna pruriens*

Dolu *Rheum emodi*

Dorema ammoniacum. *Eastern Giant Fennel.*

Vern.—*Persian*, Ushak.

A glaucous green plant, native of Persia. The plant yields a volatile oil, a resin, and a gum. The last is chiefly used in medicine as a stimulant and expectorant, and is considered useful in chronic cataract and asthma. **Oil.** **Gum.** **Medicine.**

Dracöcephalum Royleanum. (Sample sent by Dr. K. L. Dey under this name.)

Vern.—*Hindi*, Tukhm-balanga.

The seeds of this plant contain a peculiar mucilaginous matter to which are owing their demulcent and emollient properties; considered a cooling remedy in special diseases, as well as in catarrh, dysentery, and chronic diarrhœa. **Medicine.**

Drugs and Medicines.

The vegetable, animal, and mineral products medicinally used are innu-

merable. The following is a list of drugs sent to the Amsterdam Exhibition :—

<i>Abroma augusta.</i>	<i>Asparagus racemosus.</i>	<i>Cassia occidentalis.</i>
<i>Abrus precatorius.</i>	<i>Asparagus sarmentosus.</i>	<i>Cassia Sophera.</i>
<i>Acacia arabica (bark).</i>	<i>Astercantha longifolia.</i>	<i>Cassia Tora.</i>
<i>Acacia arabica (leaves).</i>	<i>Astragalus hamosus.</i>	<i>Cedrela Toona.</i>
<i>Acacia arabica (gum).</i>	<i>Balsamodendron Mukul.</i>	<i>Cedrus Deodara.</i>
<i>Acacia arabica (seed).</i>	<i>Balsamodendron Myrrha.</i>	<i>Celastrus paniculatus.</i>
<i>Acacia Catechu.</i>	<i>Bambusa arundinacea.</i>	<i>Chavica Roxburghii.</i>
<i>Acacia Catechu (variety).</i>	<i>Barringtonia racemosa.</i>	<i>Cinchona Calisaya.</i>
<i>Acacia Catechu (do.).</i>	<i>Bassia latifolia.</i>	<i>Cinchona succirubra.</i>
<i>Acacia Catechu (do.).</i>	<i>Benincasa cerifera.</i>	<i>Cichorium intybus.</i>
<i>Acacia Catechu (do.).</i>	<i>Berberis artistata (chitrak).</i>	<i>Cinnamomum Tamala.</i>
<i>Acacia leucophloea.</i>	<i>Berberis artistata species.</i>	<i>Cinnamomum zeylanicum.</i>
<i>Acalypha indica.</i>	<i>Beta vulgaris.</i>	<i>Citrullus Colocynthis.</i>
<i>Achyranthes aspera (seeds).</i>	<i>Blumea lacera.</i>	<i>Citrullus vulgaris.</i>
<i>Achyranthes aspera (twigs).</i>	<i>Boerhaavia diffusa.</i>	<i>Citrus aurantium.</i>
<i>Aconitum ferox.</i>	<i>Bombax malabaricum (gum).</i>	<i>Cleome viscosa.</i>
<i>Aconitum heterophyllum.</i>	<i>Bombax malabaricum (root).</i>	<i>Clerodendron infortunatum.</i>
<i>Acorus Calamus.</i>	<i>Bombax malabaricum (bark).</i>	<i>Clerodendron variety.</i>
<i>Adhatoda Vasica.</i>	<i>Borax.</i>	<i>Cocculus cordifolius.</i>
<i>Adhatoda Vasica (leaves).</i>	<i>Brassica campestris.</i>	<i>Cocculus palmatus.</i>
<i>Adhatoda Vasica (root-bark).</i>	<i>Brassica juncea.</i>	<i>Coccus Cacti.</i>
<i>Adiantum venustum.</i>	<i>Brassica nigra.</i>	<i>Coccus Lacra.</i>
<i>Ægle Marmelos.</i>	<i>Buchanania latifolia.</i>	<i>Cochlospermum Gossypium.</i>
<i>Aleurites moluccana.</i>	<i>Butea frondosa.</i>	<i>Coffea arabica.</i>
<i>Alahagi maurorum.</i>	<i>Casalpinia Bonducella.</i>	<i>Corchorus olitorius (seed).</i>
<i>Albizzia Lebbeck.</i>	<i>Camphora officinarum (refined).</i>	<i>Corchorus olitorius (leaves).</i>
<i>Allium Cepa.</i>	<i>Cannabis sativa (ganja).</i>	<i>Cordia Myxa.</i>
<i>Allium sativum.</i>	<i>Cannabis sativa (large twigs, flat ganja).</i>	<i>Coriandrum sativi</i>
<i>Aloe indica.</i>	<i>Cannabis sativa (large flat ganja).</i>	<i>Crocus sativus.</i>
<i>Aloe vulgaris.</i>	<i>Cannabis sativa (small flat ganja).</i>	<i>Croton Tiglium.</i>
<i>Alpinia Galanga.</i>	<i>Cannabis sativa (round ganja).</i>	<i>Cubeba officinalis.</i>
<i>Alpinia nutans.</i>	<i>Cannabis sativa (flat small twig).</i>	<i>Cucumis Melo.</i>
<i>Alstonia scholaris.</i>	<i>Cannabis sativa (flat).</i>	<i>Cucumis Melo (Momordica).</i>
<i>Althœa rosea.</i>	<i>Cannabis sativa (bháng).</i>	<i>Cucumis sativus.</i>
<i>Althœa rosea (root).</i>	<i>Cannabis sativa (charas).^u</i>	<i>Cucumis trigonus.</i>
<i>Alum sulph.</i>	<i>Capsicum annum.</i>	<i>Cucumis utilisinus.</i>
<i>Amarantus spinosus.</i>	<i>Capsicum frutescens (long pepper).</i>	<i>Cucurbita sp.</i>
<i>Ammania baccifera.</i>	<i>Capsicum frutescens (round).</i>	<i>Cuminum Cyminum.</i>
<i>Amomum Cardamomum.</i>	<i>Capsicum frutescens (long).</i>	<i>Cupressus sempervirens.</i>
<i>Amoora Rohituka.</i>	<i>Capsicum frutescens (variety).</i>	<i>Cypri sulphus.</i>
<i>Amorphophalus campanulatus.</i>	<i>Carica papaya.</i>	<i>Curcuma Amada.</i>
<i>Anacardium occidentale.</i>	<i>Carthamus tinctorius.</i>	<i>Curcuma aromatica.</i>
<i>Andropogon calamus aromaticus.</i>	<i>Carum Carui (var. white).</i>	<i>Curcuma longa.</i>
<i>Andropogon muricatus.</i>	<i>Carum Carui (var. black).</i>	<i>Curcuma Zedoaria.</i>
<i>Andrographis paniculata.</i>	<i>Carum Carui (var. small).</i>	<i>Cuttlefish bone.</i>
<i>Anilema tuberosa.</i>	<i>Carum copticum.</i>	<i>Cydonia vulgaris.</i>
<i>Anthocephalus Cadamba.</i>	<i>Carum Roxburghianum.</i>	<i>Cyperus rotundus.</i>
<i>Antimoni Ferri sulphuretum.</i>	<i>Caryophyllus aromaticus.</i>	<i>Datura fastuosa.</i>
<i>Aquilaria Agallocha.</i>	<i>Cassia sp. (senna).</i>	<i>Datura Stramonium (alba).</i>
<i>Arachis hypogæa.</i>	<i>Cassia alata (leaves).</i>	<i>Daucus Carota (seed).</i>
<i>Argyreia speciosa.</i>	<i>Cassia alata (flower).</i>	<i>Dioscorea sativa.</i>
<i>Aristolochia indica.</i>	<i>Cassia Fistula.</i>	<i>Diospyrus embuopteria.</i>
<i>Artemisia vulgaris var. indica.</i>		<i>Dorema ammoniacum.</i>
<i>Artemisia vulgaris. *</i>		<i>Dracocephalum Royleanum.</i>
<i>Artocarpus Lakoocha.</i>		<i>Eletaria Cardamomum.</i>

Erythrina indica.
Eugenia Jambolana (bark).
Ferri sulphas.
Perula Narthex.
Ficus Carica.
Ficus indica.
Ficus indica (bark).
Ficus religiosa.
Flacourtia Cataphracta.
Foeniculum vulgare.
Fumaria parviflora.
Garcinia Morella.
Gentiana Kurroo.
Glycyrrhiza glabra.
Grewia asiatica.
Gynocardia odorata.
Helleborus niger.
Helicteres Isora.
Hemidesmus indicus.
Hibiscus cannabinus.
Hibiscus esculentus.
Hibiscus Abelmoschus.
Hibiscus tiliaceus.
Holarrhena antidysenterica.
Hydrargyri per sulphuretum.
Hydrocotyle asiatica.
Hyoscyamus niger.
Ichnocarpus frutescens.
Indigofera tinctoria.
Ipomoea turpethrum.
Juniperus communis.
Lactuca scariola (var. *sativa*).
Lawsonia alba.
Lepidium sativum.
Linum usitatissimum.
Luffa ægyptica.
Mallotus Philippinensis.
Malva rotundifolia.
Mangifera indica.
Maranta arundinacea.
Matricaria Chamomilla.
Mariscus cyperus.
Melia Azadirachta (bark).
Melia Azadirachta (leaves).
Mentha sativa.
Mesua ferrea.
Michelia Champaca.
Momordica Charantia.
Moringa pterygosperma.
Morus alba.
Mucuna pruriens.
Myrica sapida (bark).
Murraya Koenigii.

Myristica moschata.
Myrsine africana.
Nardostachys Jatamansi.
Nelumbium speciosum.
Nerium odorum.
Nicotiana Tabacum.
Nigella sativa.
Nyctanthes Arbor-tristis (bark).
 Ditto (leaves).
Nymphaea lotus.
Ocimum Basilicum.
Oldenlandia biflora.
Onosma echinoides.
Ophelia Chirayta.
Orchis mascula (salep misri)
Oxalis corniculata.
Pedaliium Murex.
Pharbitis Nil.
Phyllanthus Emblica.
Pinus longifolia.
Piper Chaba.
Piper longum.
Piper nigrum.
Pisonia villosa.
Pistacia integerrima.
Pistacia lentiscus.
Pistia Stratiotes.
Plantago Ispaghula.
Plumbago rosea.
Plumbago zeylanica.
Plumbago oxidum.
Pogostemon Patchouli.
Prunus communis.
Prunus communis var. *bokhariensis*.
Psidium Guava.
Psoralea corylifolia.
Pterocarpus santalinus.
Pucedanum graveolens.
Punica Granatum.
Pyrethrum indicum.
Quercus lamellosa (bark).
Quercus lamellosa (fruit).
Quercus infectorius.
Quercus pachyphylla.
Randia dumetorum.
Raphanus sativus (seed).
Rheum Moorcroftianum.
Rhus succidanea.
Ricinus communis.
Rosa alba (var. *glandulifera*).
Sagus lævis.
Salammoniac.

Salt (Lahori).
Salt-petre.
Samara Ribes.
Santalum album.
Sapindus trifolius.
Saussurea Lappa.
Scilla indica.
Scindapsus officinalis.
Semecarpus Anacardium.
Sesamum indicum.
Sesbania ægyptica.
Sesbania grandiflora.
Seseli indicum.
Shorea robusta.
Sida cordifolia.
Solanum Melongena.
Solanum nigrum.
Soymida febrifuga.
Spinacea oleracea.
Spondias mangifera.
Stereospermum suaveolens.
Strychnos nux-vomica.
Strychnos (nut).
Strychnos potatorum.
Styrax Benzion.
Symplocos Sumuntia.
Tamarindus indica.
Taraxacum officinale.
Terminalia belerica.
Terminalia Chebula.
Tetranthera monopetala.
Thespesia populnea.
Tiaridium indicum.
Tragia involucrata.
Trapa bispinosa.
Trichosanthes anguina.
Trichosanthes dioica.
Trigonella Fœnum-græcum.
Valeriana Hardwickii.
Ventilago maderaspatana.
Vernonia anthelmintica.
Viola sp.
Vitex Negundo.
Vitex trifolia.
Wilthania somnifera.
Woodfordia floribunda.
Xanthium strumarium.
Zanthoxylum alatum.
Zingiber officinale.
Yellow arsenic.
Zizyphus Jujuba.

Duabanga sonneratioides.

Vern.—Bengali, Bandar-hulla; Burmese, Myoukgnau.

A lofty deciduous tree of Eastern Bengal, Assam, and Burma. The Timber-wood is used for tea-boxes as well as for canoes and cattle-troughs.

Dyes and Tans.

The following list of dyes used in this country is taken from a Memorandum on Indian Dyes by L. Liotard, Esq., of the Agricultural Department:—

<i>Of red and shades of red.</i>		<i>Of blue and shades of blue.</i>
<i>Cæsalpinia Sappan</i> (sappan, or Brazil-wood).	<i>Pterocarpus santalinus</i> (red sandal-wood).	<i>Indigofera tinctoria</i> (Indigo).
<i>Carthamus tinctorius</i> (safflower).	<i>Woodfordia floribunda</i> .	
<i>Calysaccion longifolium</i> (ver. surunji).	<i>Of yellow and shades of yellow.</i>	<i>Mordants used in dyeing.</i>
<i>Coccus Lacca</i> (lac).	(Indian barberry).	<i>Acacia Catechu</i> (cutch).
<i>Coccus Cacti</i> (cochineal).	<i>Butea frondosa</i> .	<i>Casuarina</i> , varieties.
<i>Lawsonia inermis</i> (henna).	<i>Bixa Orellana</i> (arnotto).	<i>Euphorbia tirucalli</i> (milk bridge).
<i>Morinda</i> , varieties (Indian mad-der).	<i>Cedrela Toona</i> .	<i>Pistacia vera</i> (pistachio).
<i>Rubia cordifolia</i> .	<i>Curcuma longa</i> (turmeric).	<i>Punica Granatum</i> (pomegranate).
<i>Mallotus Philippinensis</i> (Kamila).	<i>Symplocos racemosa</i> and varieties (ver. lodh).	<i>Tamarix</i> , varieties (tamarisk).
<i>Nyctanthes Arbor-tristis</i> (ver. harsinghar).		<i>Terminalia</i> , varieties (myrabolams).

The following is a list of dyeing substances sent to the Amsterdam Exhibition:—

<i>Acacia arabica</i> (bark).	<i>Chengrong javil</i> (root).	<i>Pesagoo</i> bark.
Ditto (legumes).	Chocolate-coloured earth.	<i>Phyllanthus Emblica</i> .
<i>Acacia Catechu</i> .	Cinnabar.	<i>Pterocarpus Marsupium</i> .
Ditto (dried slab, Burma cutch, in cases).	<i>Coccus Cacti</i> .	<i>Punica Granatum</i> .
Ditto (soft, Burma cutch, in bags).	<i>Coccus Lacca</i> .	<i>Quercus lamellosa</i> (bark).
<i>Acacia concinna</i> .	<i>Crocus sativus</i> .	<i>Quercus infectorius</i> .
<i>Acacia leucophloea</i> (leaves).	<i>Curcuma Amada</i> .	<i>Randia dumetorum</i> .
<i>Adhatoda Vasica</i> .	<i>Curcuma longa</i> .	<i>Rheum emodi</i> .
<i>Ægle Marmelos</i> .	<i>Curcuma Zedoaria</i> .	<i>Rhus succedanea</i> .
<i>Alpinia Galanga</i> .	<i>Datisca cannabina</i> .	<i>Rubia cordifolia</i> .
Alum.	<i>Diospyrus embryopteris</i> .	<i>Rubia tinctoria</i> .
<i>Anogeissus latifolia</i> .	<i>Eugenia Jambolana</i> .	<i>Sapindus detergens</i> .
<i>Areca Catechu</i> .	<i>Garcinia Morella</i> .	<i>Semecarpus Anacardium</i> .
<i>Bauhinia purpurea</i> .	<i>Glycyrrhiza glabra</i> .	<i>Shorea robusta</i> .
<i>Bauhinia speciosa</i> .	<i>Hedychium spicatum</i> .	Soda, carbonate of (sajji).
<i>Berberis Lycium</i> .	<i>Hæmatoxylon Campechianum</i> .	by
<i>Bixa Orellana</i> .	<i>Indigofera tinctoria</i> .	<i>Symplocos</i> sp. (leaves).
<i>Bombax malabaricum</i> .	<i>Lawsonia alba</i> .	<i>Tamarindus indica</i> .
<i>Borax</i> .	<i>Mallotus Philippinensis</i> .	<i>Terminalia belerica</i> .
<i>Butea frondosa</i> .	<i>Mangifera indica</i> .	<i>Terminalia Chebula</i> .
<i>Cæsalpinia Sappan</i> .	<i>Mariscus cyperus</i> .	<i>Terminalia tomentosa</i> .
<i>Calendula officinalis</i> .	<i>Memecylon tinctorium</i> .	<i>Tauri</i> (unidentified).
<i>Carthamus tinctorius</i> .	<i>Morinda citrifolia</i> .	<i>Vestilago maderaspatana</i> .
<i>Cassia auriculata</i> .	<i>Morinda tinctoria</i> .	<i>Ventilago</i> sp.
<i>Casuarina equisetifolia</i> .	<i>Myrica sapida</i> .	<i>Verdigris</i> .
<i>Cassia Fistula</i> .	<i>Nyctanthes Arbor-tristis</i> .	<i>Woodfordia floribunda</i> .
<i>Cassia Tora</i> .	<i>Ochres</i> , yellow (multani).	<i>Wrightia tinctoria</i> .
<i>Cedrela Toona</i> .	<i>Ochres</i> , yellow (piuri).	<i>Yellow arsenic</i> .
<i>Ceriops Roxburghiana</i> .	<i>Ochres</i> , yellow (ramraj).	<i>Zizyphus xylopyrus</i> .
	<i>Oldenlandia umbellata</i> .	
	<i>Ougeinia dalbergoides</i> .	

E

Ekangi. (Unidentified.)

A medicinal substance and perfume purchased at the Calcutta market. **Medicine.**
Ekangi is aromatic and is an ingredient for native tooth-powder.

Eletaria Cardamomum. *The Lesser Cardamom.*

Vern.—*Bengali, Hindi, Chhota eláchi; Tamil, Telugu, Ellakay; Burmese, Paulat.*

In India, this cardamom is chiefly obtained from the Madras Presidency specially Travankor and Kúrg. It is chiefly used as a spice. **Spice.**
Medicinally it is a cordial and stimulant. **Medicine.**

Eleusine coracana.

Vern.—*Hindi, Maruá; Dakkhini, Raggi; Tamil, Kayur; Telugu, Tamidalu.*

Extensively cultivated in the hilly districts for its grain, which forms the staple food of the poorer classes in some parts of the country, specially in South India. It is considered very nutritious. Its chemical composition is stated to be: nitrogenous ingredients; 18·12 per cent., non-nitrogenous ingredients, 80·25; inorganic ingredients, 1·63.

Embelia Ribes. (*Reduced to Samara Ribes.*)

Vern.—*Bengali, Biranga; Hindi, Baibirang; Tamil, Telugu, Vayu-vilangan.*

A scandent shrub, found in the Kumaun Himalayas, the Khasia Hills, and South India. The berries are used to adulterate black pepper. **Medicine.**
Medicinally they are regarded as pungent, heating, and stimulant.

Emblica officinalis. *Reduced to Phyllanthus Emblica. Emblic Myrabolan.*

Vern.—*Bengali, Amlaki; Hindi, Aonla; Tamil, Nellikai; Telugu, Usirika-manu.*

A middle-sized tree, found all over India. The bark, the leaves, and the fruit are astringent; used as a dyeing and tanning material. The fruit is preserved in a dried state or made into pickles and conserves; is also used as a hair perfume. The fruit, the leaves, and the bark, specially the first, are a valuable astringent medicine. **Dye.**
Fruit.
Perfume.
Medicine.

Eriodendron anfractuosum. *White Cotton Tree.*

Vern.—*Bengali, Shwet-simul; Hindi, Hatian; Tamil, Elava maram; Telugu, Pur.*

A large tree, common on the Coromandel Coast. The seeds are coated with a fine, soft, silky wool. The tree yields a gum known as the *Hátian gond*, which is used in medicine as a remedy for bowel complaints. The wood is soft, used for making toys. **Fibre.**
Gum.
Wood.

Eruca sativa.

Vern.—*Hindi, Dua.*

Cultivated all over the North-Western Provinces for its seeds, which resemble mustard; the oil expressed from them is less pungent. The green plant is used as fodder.

Eryum Lens. Lentil.

Vern.—*Bengali, Musuri; Hindi, Masur; Tamil, Misur-purpur; Telugu, Misurpappu.*

Food.

A valuable pulse, grown as a winter crop all over India. The seeds, which are of a deep red colour when husked, are split and eaten cooked. The chemical composition is stated to be as follows: nitrogenous ingredients, 30.46 per cent.; non-nitrogenous ingredients, 65.06; inorganic ingredients, 2.60. The varieties sold at Calcutta are Khári, Patnai, and Desi.

Eryobotrya japonica. Loquat.

Fruit.

A small tree, formerly native of China and Japan, now introduced into India. The subacid fruit is highly esteemed.

Erythrina indica. The Indian Coral Tree.

Vern.—*Bengali, Pálitá-madár; Hindi, Pangra; Tamil, Muruka; Telugu, Modugu; Burmese, Penlay-kathit.*

Medicine.
Timber.

A middle-sized tree, cultivated throughout India and Burma, often in hedges. The bark is used as an antibilious medicine and as a febrifuge. Light boxes, toys, and sword-scabbards are made of the wood.

Euchlæna luxurians.

Fodder.

This is a valuable fodder grass lately introduced into India. Cattle eat it greedily. The only drawback is that irrigation is required in its cultivation.

Eugenia Jambolana.

Syn.—*Sizygium Jambolanum.*

Vern.—*Bengali, Jám; Hindi, Jáman; Tamil, Naval; Telugu, Nasedu; Burmese, Thabyai-piu.*

Fruit.
Medicine.
Dye.
Timber.

A large tree, found all over India. The subacid fruit is pleasant to the taste, the juice of which is preserved and used as a carminative. The bark is astringent and employed both in dyeing and tanning; in medicine a decoction of it is used as a tooth gargle. The wood is used for building purposes.

Eugenia Jambos. Rose Apple.

Syn.—*Jambosa vulgaris.*

Vern.—*Bengali, Guláb-jám.*

A small cultivated for its fruit, which has a smell like the rose. A clay model of fruit has been sent from Lucknow.

Eugenia operculata.

Vern.—Hindi, Rai-Jaman; Burmese, Yethaby-ay.

A moderate-sized tree, of Sub-Himalayan tracts, Eastern Bengal, Burma, &c. Fruit edible; wood used for building and agricultural implements. Timber.

Eulophia vera. See *Orchis mascula*.

Excoecaria sebifera. *The Chinese Tallow Tree.*

Vern.—Bengali, Mom-chinā.

A moderate-sized tree, originally native of China and Japan, now introduced into India. Mr. Gamble states:—

“The white pulp round the seeds gives the Chinese tallow, which is separated by boiling in water. It is used in China and Japan for candles. Roxburgh says it is bad for burning, that it only remains firm at a cool temperature, and that it easily becomes rancid. It melts at 104°. The seeds give an oil, and the leaves a black dye.”

Dye.

F

Faba vulgaris. (*Reduced to Vicia Faba*). *Horse Bean.*

Vern.—Hindi, Bakla.

Cultivated in the North-Western Provinces. The beans in the green state are used as a vegetable. The grain is used as food both for man and beast. In the experiments conducted at the Lucknow Horticultural Gardens by Dr. Bonavia, the cultivation of the crop was proved to be very remunerative.

Fagopyrum esculentum. *Buck-wheat.*

Vern.—Hindi, Pimpri, Kotu, Ogal.

Cultivated in the Himalayas for the grain, which is used for food. Hindus consider it lawful to eat it on fasting days. It is considered heating.

Fagraea fragrans.

Vern.—Burmese, Anan.

An evergreen tree of Burma, where the wood is used for building purposes. Bark used as a remedy for malarious fever.

Feathers.

A good collection of peacock feathers has been sent. Brushes said to be made of China feather have also been sent: these were originally brought from China, but are now imitated in this country.

Descriptive Catalogue of Indian Produce

Feronia Elephantum. *The Wood Apple.*

Vern.—Bengali, Kathbel; Hindi, Kaithā; Tamil, Vallanga; Telugu, Velaga; Burmese, Hman.

A large tree, found all over India. The subacid fruit is largely eaten, and made into jelly. The pulp, macerated in water and mixed with sugar, is a refreshing drink. The juice of the fresh leaves is given in dysentery. A gum, resembling gum arabic, is obtained from the tree, which is used medicinally as a demulcent. The unripe fruit is astringent, prescribed in dysentery and diarrhœa. An essential oil, smelling of anise, is obtained by distillation from the leaves.

Ferri sulphas. *Sulphate of Iron.*

Vern.—Bengali, Hirakas; Hindi, Hirakasis; Tamil, Annabedi; Telugu, Annabhedi.

Medicine.
Dye.

Two kinds of sulphate of iron are sold in the market, one indigenous and the other imported. Sulphate of iron has been used in Hindu medicine from a very ancient age, externally as an astringent and internally as a tonic. It is also largely used in calico printing to dye black. A black dye is also obtained by boiling iron with unrefined sugar (*gur*).

Ferula Narthex. *Assafoetida.*

Syn.—Narthex Assafoetida.

Vern.—Sanskrit, Hingu; Bengali, Hindi, Hing; Tamil, Perungayam; Telugu, Inguva.

Gum.
Oil.
Medicine.

The assafoetida plant is a native of Kashmir, Persia, and Afghanistan, the exudation from the root of which is the assafoetida of commerce. It has a very disagreeable smell, but people accustomed to it use it as a condiment. It contains a resin, gum, and an essential oil; is a powerful antispasmodic and expectorant, a nervine stimulant and a feeble laxative. The leaves are sudorific and carminative. Mr. Baden-Powell states:—

"Assafoetida is the most powerful of the foetid gum-resins⁶; it acts as a stimulant nervine tonic; and is also an expectorant and anthelmintic; it is largely used in hysteric and nervous affections; also in colic, dyspepsia, and whooping-cough; in asthma, chronic bronchitis, and palpitation of the heart; it is said to destroy round-worm and the guinea-worm,—in doses of from 10 to 30 grains. Used by *hakims* (Muhammadan physicians) to disperse induration and to carry off urine and to promote menstruation."

Fibrous substances.

India is rich in fibrous resources; but a large number of them has not yet been utilised owing to the difficulty of extraction from the stems, or the heavy cost of transport. The following is a list of fibres sent to the Amsterdam Ex

Abroma augusta.
Abutilon indicum.
Acacia Latronum.
Agave americana.
Agave indica.
Agave vivipara.
Aloe vulgaris.
Ananassa sativa.
Anona reticulata.
Anona squamosa.
Bambusa arundinacea.
Bauhinia racemosa.
Bauhinia tomentosa.
Bauhinia Vahlia.
Berrya Amonilla.
Betula Bhojpattra.
Bœhmeria nivea.
Bombax malabaricum.
Borassus flabelliformis.
Brouss. Aotea papyrifera.
Butea frondosa.
Calamus species.
Calotropis gigantea.
Cannabis sativa.
Careya arborea.
Cerbera Odollam.
Cocos nucifera.
Corchorus olitorius.
Cordia augustifolia.
Cordia Myxa.
Crotalaria juncea.
Daphne papyracea.
Dischrostachys ceneria.
Dolichandrone tomentosa.
Ficus bengalensis.
Ficus religiosa.
Ficus Tsiela.
Ficus sp. (Tamil, Kalichi).
Ficus sp. (Tamil, Gundateli).
Fourcroya gigantea.
Gora corylifolia.
Gossypium herbaceum (cotton).
Gossypium variety, Râth.
Gossypium variety, Kulpahâr.
Gossypium variety, Meerut.
Gossypium variety, New Orleans.
Gossypium variety, Desi.
Gossypium variety, Upland Georgia.
Gossypium variety, Country.
Gossypium variety, American.
Gossypium variety, Uncleaned.
Gossypium variety, Cleaned.
Gossypium variety, New Orleans.

Gossypium variety, Bavi.
Gossypium herbaceum variety, Garo Hills.
Gossypium variety, religiosum (Nankin).
Gossypium (from old plants).
Gossypium (fibre from stems).
Grewia calicata.
Grewia oppositifolia.
Grewia rotundifolia.
Grewia tilaefolia.
Hardwickia binata.
Hibiscus Abelmoschus.
Hibiscus cannabinus.
Hibiscus cannabinus (Patsan).
Hibiscus esculentus.
Hibiscus esculentus (bendi fibre).
Hibiscus esculentus (okra fibre).
Hibiscus esculentus (okra hemp).
Hibiscus ficulneus.
Hibiscus mutabilis.
Hibiscus rosa sinensis (outer bark).
Hibiscus rosa sinensis (inner bark).
Hibiscus sp.
Hibiscus tiliaceus.
Linum usitatissimum.
Malachra capitata.
Marsdenia Roylei.
Melia Azadriachta.
Moringa pterygosperma.
Musa paradisiaca.
Musa sapientum.
Musa textilis (fine).
Ditto ditto (rough).
Odina Wodier.
Opuntia Dillenii (prickly pear).
Pavonia odorata.
Pavonia zeylanicum.
Phoenix dactylifera.
Phoenix sylvestris.
Polyalthia longifolia.
Saccharum Munja.
Saccharum Munja (beaten for rope-making).
Saccharum officinarum.
Saccharum Sara (flower).
Saccharum Sara (beaten stalks).
Saccharum spontaneum (flower).
Sansevieria zeylanica.
Sesbania aculeata.
Sesbania ægyptica.
Shellus aspera.
Sida acuta.
Sida rhombifolia.
Sida species.
Sterculia ornata.

***Ficus bengalensis.* The Banyan Tree.**

* **Syn.**—*Ficus indica*, Roxb.

* **Vern.**—Bengali, Bat; Hindi, Bar; Tamil, Alamaram; Telugu, Mari; Burmese Pinyoung.

A large evergreen tree, found all over India. ^{Quercia} Hindus plant it for

shade, and is regarded by them as a sacred tree. It is the largest shade-giving tree in India: the one at the Royal Botanical Garden at Calcutta, now 100 years old, was 80 feet in height, and had a diameter of 300 feet previous to the cyclone of 1864. The fruit is eaten by the poorer classes, especially in seasons of scarcity. A coarse rope is made from the bark and the ærial roots; the milky juice which exudes from the bark is made into birdlime; the leaves are used for plates; lac is collected on the tree; in Assam, the silk-worm, *Bombax Religiosa*, feeds on the leaves. Medicinally, the milky juice is used for external application in pains and bruises, and internally taken in special diseases; the bark is used as a tonic.

Ficus Carica. *The Common Fig.*

Vern.—Hindi, Anjir.

Cultivated in the North-Western Provinces, the Punjab, and the Western Himalayas. The dried fruit is sold in the market, and is chiefly used in medicine as a demulcent and laxative in cases of constipation, diseases of the lungs and urinary bladder.

Ficus elastica. *See Caoutchouc.*

Ficus infectoria.

Vern.—Bengali, Hindi, Pākūr; Tamil, Pepere, kurku; Telugu, Bassari; Burmese, Nyounghin.

A large tree, found in Bengal, Burma, and Central India. Young shoots eaten as a vegetable; bark yields a good fibre.

Ficus religiosa. *The Pipal Tree.*

Vern.—Bengali, Ashnithwa; Hindi, Pipal; Tamil, Arasa; Telugu, Rai; Burmese, Nyounghandi.

A large tree, found all over Bengal, North-Western Provinces, and Central India. It is one of the trees which the Hindus consider sacred, and plant on road sides and other public places for shade. The young buds and fruit are eaten, especially in times of scarcity. A milky juice exudes from the bark, which, when hardened by exposure, resembles gutta-percha. In Assam, the *gori* or *deomuga* silk-worm feeds on the leaves. A fibre is extracted from the bark, of which a sample has been received from Madras. Medicinally bark astringent, used in special diseases and to promote suppuration of abscesses and boils; fruit laxative, helps digestion, and is a remedy for asthma.

Ficus Tsiela.

A fibre, sample of which has been received from the Madras Forest Department. Dr. Brandis suggests that more attention should be paid to it.

Ficus sp.

Samples of two fibres called in Tamil *kalichi* and *gunda-tehi* have been received from the Madras Forest Department.

Fishing Implements.

No collection of fishing implements has been made in any part of India, but from Burma specimens have been sent by Mr. D. Smeaton, Director, Department of Agriculture and Commerce of that Province, and of which the following is a description :—

The *Tsoun* is made of bamboo in the shape of a hollow hemisphere, having an opening at the top for the double purpose of easily handling the implement itself and readily extracting the fish caught inside. The largest size employed is about two cubits in diameter. In using the *Tsoun*, the fisherman smartly plunges it into some likely part of the fishery stream, and the fish thus impounded are taken out through the aperture at the top of the basket.

The *I'ingwai* is made of split bamboos, bound together in a row with a small space between each. It is usually about three feet square, and is used only near the sides of streams for catching prawns and shrimps. When used, it is placed upright in the water in the form of a semicircle, with the outer edges turned inwards so as to form two chambers, one on each side, with a small opening into each leading from the passage thus formed in the centre. Bait is used, and generally consists of beans or rice made into balls mixed with mud.

The *Bong* is a bamboo basket made in the shape of a vase with a long neck. About two inches above the bottom of the basket a small aperture is made, to which on the inside is attached a simple trap consisting of two pieces of bamboo net-work fixed to either side of the aperture and meeting near the centre of the basket. Fish entering the aperture can readily pass between the net-work, but the net-work being shaped like a wedge with the aperture as the base, prevents their getting out again. Bait consisting of a lump of earth containing white-ants is commonly used. The *Bong* is used in pools and small streams, and the fisherman when setting it sinks it well into the ground.

The *Hmyone* is a cylindrical-shaped basket of bamboo about three cubits long and from three to five cubits in circumference. One end of the tube is closed, the other is fitted with an entrance shaped like an inverted cone, the base forming the mouth. This is the trap, several of which are fixed within the tube, one behind the other. The implement is placed in the stream against the current or on submerged lands in the rains. The conical shape of the trap inside the *Hmyone* admits the fish into the tube, but prevents their getting out.

The *Tsainlain* is not unlike the *Hmyone*, but bigger, being usually about five cubits in circumference and three in length, and with the open end larger than the other. It is made of stouter bamboos and is provided with only one trap, which is at the mouth or open end. It is used for catching large fish at the mouths of creeks and near the seaboard. To secure it from getting adrift when set, it is either attached to a tree by a rope or secured to two poles on either side of it fixed in the ground.

The *Ngayitsai* is simply a wicker barrier thrown across a running stream to prevent the fish escaping; when the stream dries up the fish are caught. For such of the fish as endeavour to escape by jumping on to the bank at either end of the *tsai*, a hole is dug into which they drop.

The *Toke* is similar to the *Tsainlain* in the shape of a basket, but the trap is

more elaborate. The open end of the basket is provided with a sliding door working up and down between two bamboos placed one on each side of the mouth of the basket. When the trap is set the door is pulled up by a string attached to the top of it. This string is carried down to the centre of the upper surface of the basket, where it is fastened to a stick placed so as to slip readily on pressure being applied. From this stick the bait is suspended by a string. Disturbing the bait unloosens the string and the door falls, shutting up the fish inside. This implement is used only for large fish and chiefly on the seaboard.

The *Koncsinbyan* is a bamboo net which is thrown across a stream like the *Ngayitsai*, but is provided with a receptacle for the fish caught. The net-work is higher above the water at each end than in the centre, which is placed only about a cubit above the level of the water. To this part of the net-work is attached a sloping platform. The fish coming against the obstruction, endeavour to leap over it and drop on to the platform.

The *Yatthel* is used for catching small fish and prawns in shallow places. It is made of bamboos plaited into the shape of a shovel to which is attached a handle. It is used in the same way as small shrimp-nets are in Europe, along the sands at the water's edge.

The *Iindoan* is a similar contrivance, only larger, and made usually of wicker-work and with two handles to enable the fisherman to scoop it along with both hands.

The *Kadone* is a bamboo enclosure having four sides, one of which is so constructed as to form a sort of entrance, through which the fish can pass into the enclosure but cannot get out again, the sides of the entrance acting as doors opening inwards and shutting on the fish passing through. It is used chiefly for catching turtles.

The *Myinwoon* consists of a dam of wicker-work thrown across a stream and provided with a wicker platform in the centre extending down-stream. The dam causes the water to rise to the level of the platform and to rush over it. The net-work of the platform allows the water to escape, but retains the fish carried along with the stream.

The *Boukkal* is simply a piece of wicker-work in the shape of a shovel and is used with the hands. It is dipped into the water and drawn up smartly, and is used for catching small fish only.

The *Bonglong* is a wicker-work receptacle shaped like a cylinder which the fishermen attach to the sides of their boats, and in which they keep the fish caught. In this way the fish are conveyed alive to market.

The *Jhan* consists of a piece of wicker-work stretched across from bank to bank of the fishery. When used it is simply dragged across the stream. The fish are impounded between it and the shore and there caught.

The *Taybanwin* is a large bamboo trap shaped like a deep box, having its lower portion entirely closed and the upper portion partially open. It is sunk in the water just sufficiently to allow of the lower portion being completely under water. When the fisherman thinks fish have found their way into the trap, it is lifted up to the side of his boat, and the fish, dropping to the lower enclosed portion with the water falling through it, are there caught.

The *Trik* is similar to the *Tsoun* in shape. It is a bamboo basket which the fisherman holds in his hand with the mouth against the current. As the fish are driven into the basket by the current the basket is smartly lifted up and the fish are taken.

Flacourtia Cataphracta.

Vern.—*Bengali*, Pányala, Talispatra; *Hindi*, Tálispatra; *Burmese*, Na-yuwai.

A tree of Assam, Bengal, Burma, Bombay, and Western Ghâts. The leaves and young shoots taste like rhubarb and are supposed to possess astringent and stomachic properties. An infusion of the bark is prescribed in hoarseness. The seeds yield an oil, a sample of which has been received from Noakhali, in Bengal. Medicine. Oil.

Fœniculum vulgare. Fennel Seeds.

Syn.—Fœniculum Panmorium.

Vern.—*Bengali*, Mauri; *Hindi*, Sonf; *Tamil*, Sohikire; *Telugu*, Pedda-jila-katta.

Cultivated for the seeds, which are largely used as a condiment. In medicine they are used as a stimulant, aromatic, and carminative; much used in flatulency, colic, and dyspepsia. Distilled fennel-water, called *arak-badián*, is used as a domestic carminative. The seeds also contain a volatile oil. The root is said to be purgative and the leaves diuretic. Spice. Medicine. Oil.

Food-crops.

The principal food-crops cultivated in India are as follows:—

Cereals and millets.

Oryza sativa (rice).
Triticum vulgare (wheat).
Hordeum hexastichum (barley).
Zea Mays (maize).
Coix lachryma (Job's tears).
Eleusine coracana.
Oplismenus frumentaceus.
Panicum miliaceum.
Panicum miliare.
Panicum polypodium.
Panicum Uliginosum.
Paspalum scrobiculatum.
Penicillaria spicata.
Setaria italica.
Sorghum bicolor.
Sorghum saccharatum.
Sorghum vulgare.

Peas and pulses.

Gajanus indicus.
Canavalia ensiformis.

Cicer arietinum.
Cyamopsis psoraloides.
Dolichos biflorus.
Dolichos Lablab.
Ervum Lens.
Glycine Soja.
Lathyrus sativus.
Phaseolus aconitifolius.
Phaseolus calcaratus.
Phaseolus Mungo.
Phaseolus Mungo (var. *Max*).
Phaseolus Mungo (var. *aureus*).
Phaseolus Mungo (var. *radiatus*).
Pisum arvense.
Pisum sativum.
Vicia Faba.
Vigna Catiang.

Other food-crops.

Amarantus (different species of).
Fagopyrum esculentum.
Trapa bispinosa.
Arachis.

The following figures regarding the food of the population in the different provinces have been taken from the Famine Commissioner's Report:—

PROVINCE.	PERCENTAGE OF FOOD-GROWING AREA UNDER			Total population, in millions.	Population eating rice in millions
	Wheat or Barley.	Millets.	Rice.		
Punjab	54	41	5	20	1
North-Western Provinces . .	57	34	9	42	4
Bengal and Assam	Not known			66	46
Central Provinces	27	39	34	8	3
Berar	17	82	1	2	...
Bombay	7	83	10	17	2
Madras . . . . .	...	67	33	31	10
Mysor . . . . .	...	84	16	5	1

Fourcroya gigantea. *The Great Aloe.*

Vern.—Tamil, Simai-kathalai.

Fibre.

Said to have been introduced into India from South America. It yields a fibre, 5 or 6 feet long, finer than the Agave.

Fox skin.

A sample has been sent by Babu Ambá Datt Joshi, of Almora. There is no prospect of a large supply.

Fragaria vesca. *Strawberry.*

Vern.—Punjabi, Kanzar, ingrach, &c.

Fruit.

Grows wild in the Punjab Himalayas; also cultivated in the plains. A clay model of the fruit has been sent. Mr. Atkinson, in his Gazetteer of the Himalayan Districts, states that the wild strawberries "yield abundantly a palatable fruit, which, however, can be wonderfully improved by cultivation."

Fruits and Nuts.

India is very rich in fruits, of which the mango, orange, coconut, plantain, mango, ~~mango~~ lichi, papaw, guava, pine-apple, loquat, pear, jack,

mulberry, raspberry, strawberry, roselle, melon, pomegranate, grape, walnut, apple, jambo, wood-apple, tamarind, &c., are the best known. Dried fruits are mostly brought from Kabul, of which the pomegranate, almond, pistachio nut, currant, &c., are the principal.

Fumaria parviflora.

Vern.—Hindi, Pitpápara.

Found in rice-fields and other damp places. The dried plant is ~~ex-~~ Medicine, tremely efficacious in low fever, and is also employed as an anthelmintic, diuretic, diaphoretic and aperient, and to purify blood in s

G

Gandh-bena. (Andropogon species.)

A grass, found in low marshy lands, and used as a fodder. The root Fodder. has a fragrant smell like that of khas-khas.

Gandraima. (Unidentified.)

A medicinal substance sent from Kumaun by Babu Ambá Datt Joshi. Medicine.

Garcinia Morella. *Gamboge.*

Vern.—Hindi, Rewand-chini, Gota-gamba; Tamil, Mukki; Burmese, Sanatosi.

An evergreen tree, found in the Khasia Hills, Eastern Bengal, and Western Coast of India. The gum-resin, gamboge of commerce, is the Gum. produce of this tree. But the gum is not carefully prepared in India, and the supply is chiefly received from Siam, although the Indian produce has been found by chemical examination to be as good as that sent to Europe through Singapur. It is used as a pigment; in medicine it is a Medicine. warm purgative, and considered a valuable hydragogue cathartic in dropsy and obstinate constipation, and also in cerebral diseases and tape-worm.

Garcinia Mangostana. *Mangosteen.*

Vern.—Burmese Mengkop.

The mangosteen tree is cultivated in British Burma (South Tenasserim) Fruit. for its fruit, which is considered by many the most palatable of all known fruits. The integument of the fruit contains a very strong and Tan. valuable tannin, and is also used as an astringent medicine. Medicine.

Garuga pinnata.

Vern.—Bengali, Jám, Kharpat; Hindi, Ghogar, Kaikar; Tamil, Karre vem, *Telugu*, Garuga; Burmese, Chinyok.

A large deciduous tree, found in almost all parts of India and Burma.

Wood (of which a sample has been sent) is not durable, but seasons well; used for house-building and fuel. Bark used for tanning; leaves as fodder; fruit edible; the tree yields large quantities of gum, but of no value.

Gentela. (Unidentified.)

A gall-like substance, found in the native shops of Calcutta. Use not known.

Gentiana Kurroo. *Himalayan Gentian.*

Vern.—*Bengali, Hindi, Karu, katki.*

The plant grows near the snow-hills of the Himalayas. The root is used in medicine as a bitter tonic and substituted for the true gentian. About five tons are annually exported from Kumaun.

Gethi. See *Dioscorea versicolor*.

Gila. (Unidentified.)

A smooth-surfaced nut, the kernels of which are administered as a tonic after child-birth.

Gluta travancorica.

Vern.—*Tinnevely, Shenkurungi.*

A very large evergreen tree, found in the hills of Travancor and Tinnevely. Mr. Gamble states that "the wood is little used, but its splendid colour and markings should rapidly bring it to notice as a valuable wood for furniture. It seems to season very well, and works and polishes admirably."

Glycine Soja. *Soy Bean.*

Vern.—*Hindi, Bhat, Bhatwans.*

Extensively cultivated in the hills of Kumaun as a food-crop. It is used as food both for man and cattle. Its chemical composition has been ascertained as follows:—

Nitrogenous ingredients	per cent.	37·74 to 41·54
Carbonaceous or starchy ingredients	„	29·54 to 31·08
Fatty or oily matter	„	12·31 to 18·90

Glycyrrhiza glabra. *Liquorice.*

Vern.—*Bengali, Jaisthamadhu; Hindi, Mulethi, Rubus sus.*

The liquorice root is brought to India from South Europe, Canada, and Cochin China. It has been known to Hindu physicians from a remote

period, and is described to possess sweet demulcent properties useful in pulmonary affections, hoarseness, thirst, &c. The root of *Abrus precatorius*, which possesses similar properties, is often sold in the market as liquorice. Liquorice is also used in calico-printing to perfume the cloths printed.

Gmelina arborea.

Vern.—Bengali, Gámár; Hindi, Gambhár; Tamil, Gumadi; Telugu, Gumar-tek; Burmese, Yama-ney.

A moderate-sized or large tree, found all over India and Burma. The wood is highly valued for planking, furniture, musical instruments, carving, and other purposes. In Burma, images, logs, and canoes are made of it. It is easily worked and readily takes paint or varnish.

Goats' grease.

There is no trade in this article. The quantity produced in the country is used for home consumption. Goat-flesh is largely eaten by all classes of the people.

Golpatta. (Phoenix paludosa.)

The sheaths are largely used in the suburbs of Calcutta to thatch houses. They are brought from the Sundarbans.

Gonra. (Unidentified.)

A Sundarban shell, brought to Calcutta, of which a good lime is made.

Gonwari phul. (Unidentified.)

A medicinal substance, sold at the native shops of Calcutta; use not known.

Gora corylifolia (?)

A fibre sent from Madras under this name.

Fibre.

Gossypium herbaceum. Cotton.

Vern.—Sanskrit, Karpas; Bengali, Tulá; Hindi, Rui; Tamil, Parutti; Telugu, Pratti; Burmese, Wa.

Cotton wool is the fibrous substance attached to the seeds of several species of *Gossypium*. The cotton plant is by some authors regarded as indigenous to this country, and the fabrics made in India were in ancient times the wonder of the world. Dacca, a town in Bengal, was the seat of extensive cotton-fabric manufacture in ancient times. In the last century the East India Company used to export large quantities of cotton fabrics to Europe, but the native manufacture has now almost entirely been

superseded by the cheap machine-made articles from Manchester. Raw cotton is now largely exported to Europe, and the following figures show the quantities exported during the five years ending 1881-82:—

	Quantity, Cwts.	Value. £
1876-77	4,557,914	11,746,183
1877-78	3,459,077	9,383,534
1878-79	2,966,060	7,913,045
1879-80	3,948,476	11,145,452
1880-81	4,541,539	13,241,734

The American war of 1865-66 gave great impetus to this trade; before that date the trade was not so important.

Various attempts have from time to time been made to improve the quality of cotton, and a special office (that of the Cotton Commissioner) was for some time entertained to look after the interests of the cotton trade. The exotic varieties that have been acclimatised in the country are New Orleans, Upland Georgian, Bahmic, &c. Other varieties that deserve notice are the Garo Hills cotton, a long-stapled, soft fibre lately discovered; and the Nankin (*G. herbaceum*, var. *religiosum*), a naturally-coloured fibre said to be suitable for brown uniforms for soldiers. The Hinganghat cotton has found most favour in the European market.

Cotton seeds are a valuable fodder, very nutritious owing to the large percentage of phosphorus they contain. They also yield an oil by expression, but very little oil is extracted in this country.

Grewia asiatica.

Vern.—Bengali, Hindi, Phalsa; Telugu, Putiki.

A small tree, cultivated in many parts of India for its subacid fruit, which, macerated in water, forms a refreshing drink. Mr. Baden-Powell states that there are two kinds, one sweet called *shakkari*, and the other acid called *sharbati*. The fruit is supposed to be astringent, used to allay thirst and to give tone to the stomach.

Grewia caticata (?)

A fibre sent from Madras under this name.

Grewia oppositifolia.

Vern.—Hindi, Biul.

A moderate-sized tree of the North-West Himalayas. The leaves are used as fodder; the bark yields a fibre, used for rope-making and paper, but is not durable.

Grewia rotundifolia (? *G. orbiculata*).

A fibre sent from Madras under this name.

Grewia sapida.

A clay model of the fruit has been sent from Lucknow. The plant is an undershrub, found in the Sub-Himalayan regions.

Grewia tiliaefolia.

Vern.—Hindi, Pharsa, Dhamin; Tamil, Chandachimaram; Telugu, Thana.

A moderate-sized tree, found in almost all parts of India. Fruit edible; Fruit. inner bark made into cordage. A sample of fibre has been received from Madras.

Grislea tomentosa. See *Woodfordia floribunda*.

Guatteria longifolia. (Reduced to *Polyalthia longifolia*.) *Mast Tree*.

Vern.—Bengali, Debdari; Tamil, Asokmaram; Telugu, Asoka chettu.

A very handsome, erect-growing tree, found in Bengal and Madras. The inner bark is suitable for the manufacture of rope and cordage, and Fibre. the outer bark for mats and paper. In Bengal the tree is only used for fire-wood, and the bark is not used at all.

Gugli. (Unidentified.)

A shell found in tanks and marshes, from which lime is made. ✓

Guizotia oleifera. *Niger Seed*.

Vern.—Bengali, Hindi, Sirguja, Ram til; Tamil, Uchellu; Telugu, Ulisi.

Cultivated in Bengal, chiefly in the hilly districts, for its seeds, which Oil. yield a sweet oil resembling sesamum oil. Its commercial name is Niger Seed.

Gums and Resins.

Most of the collection of gums and resins sent to Amsterdam has been received from the Madras Forest Department. The price at which they can be procured is stated to be 2½d. to 4d. per lb. The collection consists of gum resins produced by the following trees:—

Acacia arabica.	Butea frondosa.
Acacia Catechu, var.—Pegu.	Canarium strictum.
Acacia Catechu, „ Belguti.	Cassia Fistula.
Acacia Catechu, „ Janakpuri.	Caoutchouc (india-rubber).
Acacia leucophloea.	Chloroxylon Swietenia.
Ailanthus excelsa.	Cochlospermum Gossypium.
Ailanthus malabarica.	Dalbergia paniculata.
Albizia Amara.	Diospyros melanoxylon.
Albizia Lebbeck.	Eriodendron anfractuosum.
Albizia odoratissima.	Feronia Elephantum.
Anogeissus latifolia.	Ferula Narthex.
Baslamodendron Mukul.	Gyrocarpus Jacquini.
Bombax malabaricum.	Hardwickia binata.

Jhinjori gum (unidentified).
 Kudru gum (unidentified).
 Melia Azadirachta.
 Moringa pterygosperma.
 Mangifera indica.
 Nagari gum (unidentified).
 Pinus longifolia.
 Pterocarpus Marsupium.
 Sapindus trifoliatius.

Semecarpus Anacardium.
 Shorea robusta.
 Shorea, species.
 Styrax Benzoin.
 Terminalia Arjuna.
 Terminalia tomentosa.
 Vateria indica.
 Vateria malabarica.
 Zizyphus rugosa.

Gunnies.

Since the last American war the cultivation of jute and the manufacture of gunnies have received a great impetus. Until very lately gunnies were made entirely by hand-loom, but jute mills are now springing up on every suitable site on the Hugli in the neighbourhood of Calcutta. The samples sent to Amsterdam have been chiefly supplied by these mills. The description of gunny cloths sent are—

Hessian cloth for San Francisco trade.
 Egyptian grain bag.
 Australian wool pack.
 " corn sack.
 Twill cloth.
 Australian corn sackcloth.
 Plain E cloth.
 Striped C cloth.
 Heavy C cloth.
 Striped corn bag for country trade.
 Plain E bag for shipment of seeds.
 Salt bag for country trade.
 Stair carpeting.

During the year 1880-81, gunny cloths of the value of £1,130,671 were exported from India.

Gynocardia odorata. *Chalmoogra.*

Vern.—Bengali, Chalmugra.

Medicine.
 Oil.

A moderate-sized evergreen tree of Eastern Bengal, Assam, Chittagong, and Burma. The seeds yield by expression an oil very useful in the treatment of all sorts of skin diseases, specially leprosy.

Gyrocarpus Jacquini.

Syn.—G. asiaticus.

Vern.—Hindi, Zaitun; Telugu, Tenaku; Burmese, Pinlay-thitkouk.

Timber.
 Gum.

A deciduous tree of South India and Burma; wood used to make boxes and toys; seeds made into rosaries and necklaces. The tree yields a gum.

H

Hæmatoxylon Campechianum. *Logwood.*

Originally a native of Central America and the West Indies; intro. Dye. duced into South India. The wood is used as a dye and the bark as an astringent.

Hardwickia binata.

Vern.—*Hindi*, Anjan; *Tamil*, Acha; *Telugu*, Nar-yepi.

A deciduous tree, found in the dry forests of South and Central India. Mr. Gamble states that it is perhaps "the hardest and heaviest wood in India; it is extremely durable, liable to split, but does not warp. It is used for bridge and house posts and for ornamental work. It is recommended for sleepers, but is probably too hard, heavy, and difficult to work, to be in much favour. Out of nine sleepers laid down on the Mysor State Railway and taken up after 7 to 8 years, six were found good, two still serviceable, and only one bad. About 2,000 have been used on the Holkar and Nimach line. The bark yields a strong and valuable fibre. The leaves are given as fodder to cattle. It yields a gum." Three samples of fibre and one of gum have been received from the Madras Forest Department. Timber. Gum. Fibre.

Harphulari. (*Phyllanthus distichus*.)

A conserve is made of the fruits at Birbhum in Bengal.

Hedychium spicatum.

Vern.—*Hindi*, Kapur-kachri.

Grows on the Himalayas. • The aromatic root possesses carminative and stimulant properties; it is also used as a perfume, and as an adjunct to other dyes in calico-printing with the object of giving a fragrance to the cloth. It is, however, chiefly used as a medicine for cattle. A few tons are annually exported from the Kumaun hills. Medicine. Dye.

Hedyotis umbellata. (*Reduced to Oldenlandia umbellata*.)

Vern.—*Tamil*, Sya-emburel cheddi; *Telugu*, Cherivelu.

The root is used as a dye. A sample has been received from the Madras Forest Department. Dr. Bidie states:—

"This article—the *chay* root—holds the same place amongst Indian dye-stuffs as madder does in Europe. For producing the brilliant and fast red dye for which Madras handkerchiefs were once famous, this root is used along with the *Morinda*, and alum as a mordant. When employed with *Ventilago* it gives the chocolate colour formerly so much prized in the *Bandana*, or Pulikat handkerchief. With iron the *chay* gives a black, and with safflower, lime-juice, and soda an unstable red colour."

Helianthus tuberosus. *Jerusalem Artichoke.*

Vern.—Bengali, *Hindi*, Surajmukhi.

Cultivated in gardens as a vegetable. A clay model from Lucknow has been sent.

Helicteres Isora. *Screw Plant.*

Vern.—Bengali, Antmora; *Hindi*, Murorphali; *Tamil*, Valambirikai; *Telugu*, Gabardarra; *Burmese*, Thugmay-chay.

A shrub, found in almost all parts of India and Burma. The singular-looking fruits of this plant, consisting of five capsules twisted closely in the shape of a screw, are made into a liniment for application on sores of the ear. They are also internally prescribed in colic, from an idea that the twisted capsules are supposed to resemble the convulsions of the intestines. The branches yield a fibre suitable for the manufacture of coarse cordage and a kind of gunny bags.

Medicine.

Fibre.

Helleborus niger. *Black Hellebore.*

Vern.—Bengali, Kálá-katki.

The sample has been sent by Dr. Kanny Lall Dey, who states that black hellebore is produced in Nepal. It is a powerful cathartic administered in maniacal and dropsical cases; but owing to its action being very violent and result uncertain, its use has not been recommended. In veterinary pharmacy it still holds an important place. The article is much adulterated.

Medicine.

Hemidesmus indicus. *Indian Sarsaparilla.*

Vern.—Bengali, Anantamul; *Hindi*, Magreba; *Dakhini*, Nannári; *Tamil*, Gadisugandhi; *Telugu*, Pala-sugandi.

Medicine.

The root of this plant is used as a substitute for sarsaparilla. It possesses diuretic, diaphoretic, and alterative properties. The root of *Hemidesmus indicus* is often mixed with that of *Ichnocarpus frutescens*.

Hermadactylus.

Vern.—Bengali, Surinjan.

Medicine.

The sample has been supplied by Dr. Kanny Lall Dey, who gives the following description of the substance in his 'Indigenous Drugs of India':—

"The bulbs or cormus of some unknown species of the natural order Liliaceæ. There are two varieties of this substance commonly sold in the Indian bazárs, viz. *Surinjan talk*, or bitter, imported from Kashmir, and *Surinjan shirin*, or sweet, from Arabia. They are evidently obtained from some species closely allied to that of colchicum, the medical virtue of which they have been found to possess in a nearly equal degree, and they constitute, therefore, an excellent substitute for it."

Hibiscus Abelmoschus. *Musk Mallow.*

Syn.—*Abelmoschus moschatus.*

Vern.—*Sanskrit, Bengali, Kāsturi; Hindi, Mushkdānā; Dakhini, Kālā-kasturi; Tamil, Kastura-benda; Telugu, Karpura-benda; Burmese, Balu-waki.*

An annual, found in the rainy season in many parts of India. The seeds, called *musk mallow* in English and *hub-ul-mushk* in Arabic, from its smell resembling a mixture of musk and amber, are used medicinally in chronic dyspepsia as a cordial and stomachic. They are also used as a scent to perfume powders and pomatums. The stalks yield a white, glossy fibre, which in Dr. Roxburgh's experiments broke with a weight of 107 lbs. In Bengal the plant grows wild, within enclosed orchards, under the shade of larger trees, and may probably be made to take the place of useless undergrowths, if a demand arises for the fibre and the seeds. The seeds deserve attention as a perfuming agent: they sell at Calcutta at 2½s. per pound.

Medicine.

Perfume.

Fibre.

Hibiscus cannabinus. *Hemp-leaved Hibiscus; Brown Hemp.*

Vern.—*Bengali, Mesta-pāt; Hindi, San; Dakhini, Ambāri; Tamil, Palungu; Telugu, Ghongu-kuru.*

Cultivated in the North-Western Provinces and Punjab for its fibre, of which ropes and cordage, sackcloth and paper are made. The plant also grows wild in the Kumaun hills. In the plains it is generally put on the edges of the fields in which other crops have been sown. *Hibiscus cannabinus* fibre is not so good as the fibre of *Crotalaria juncea*, but it is stronger, as proved in Dr. Royle's experiments, in which it broke with a weight of 190 lbs., while *san* broke with 150 lbs. The young leaves are eaten as pot-herb; seeds are used as an external application on pains and bruises.

Fibre.

Medicine.

Hibiscus esculentus. *Okra.*

Vern.—*Sanskrit, Gandhamula; Bengali, Dhenras; Hindi, Bhindi; Tamil, Vendi, Telugu, Benda.*

A herbaceous annual, cultivated all over India for its fruit, which is eaten as a vegetable. The mucilage from the fruits and seeds is used medicinally as a demulcent. The stems yield a good fibre, which, however, has not yet been much utilised. They are thrown away or burnt after the fruit has been removed. The fibre can probably be obtained cheaper than many fibres now in use, should a market be established for it. Major Drury, in his work on the "Useful Plants of India," states that the fibre is "strong and pliant, and well suited for the manufacture of ropes, string, gunny bags, and paper. A bundle of them tested by Dr. Roxburgh bore a weight of 79 lbs. when dry and 95 lbs. when wet."

Food.

Medicine.

Fibre.

Hibiscus ficulneus.

Vern.—*Bengali*, Ban-dhenras; *Tamil*, Parupu benda, Nella benda.

Dr. Balfour states that "it grows abundantly in the black cotton soils of India, and the bark contains a large proportion of white reticulated fibre similar to that obtained from the mulberry, and useful for gunny bags and paper."

Hibiscus mutabilis.

Vern.—*Bengali*, Sthalpadma; *Hindi*, Gul-i-ajail.

Cultivated in gardens for its flowers, which are given as an offering to gods. The stems yield a fibre, of which the inner layer is soft and silky.

Hibiscus rosa-sinensis. Shoe-flower.

Vern.—*Bengali*, Jabá; *Dakhini*, Jasut; *Tamil*, Shappattup-pu; *Telugu*, Java-push-pamu.

Cultivated in gardens for its red flowers, which are given as an offering to the Goddess of Energy. In medicine the flowers are considered emollient, and an infusion of the petals is given as a demulcent. The flowers also yield a red dye, and may be used to polish boots and shoes. The stems yield a fibre, of which the inner layer is soft and silky.

Hibiscus Sabdariffa. Roselle; Red Sorrel.

Vern.—*Bengali*, Mestá; *Dakhini*, Lál-anbárá; *Tamil*, Sivappu kashuruk-kai; *Telugu*, Erra-gom-kaya; *Burmese*, Them-ban-khien-boung.

Cultivated in gardens for the calyces, which are acid in taste, and are made into an excellent jelly. The stems contain a good silky fibre. The leaves are used as greens. A clay model has been sent from Lucknow.

Hibiscus tiliaceus.

Syn.—*Paritium tiliaceum*.

Vern.—*Bengali*, Bola, Chelwa; *Burmese*, Thengbon.

Common in the Sundarbans and the river-banks of Burma. The fibre of the inner bark is made into cordage. The bark is used in medicine.

Hides and Skins.

Extensive trade is carried on in raw hides and skins. These are chiefly brought to the seaport towns from the interior and thence exported. The value of hides and skin; exported during the five years ending 1880-81 was as follows :—

	Value.
1876-77	2,998,683
1877-78	3,756,887
1878-79	3,096,847
1879-80	3,738,005
1880-81	3,733,565

Hijalphál. See *Barringtonia racemosa*.

Hital leaves.

Mr. Gamble states that Hital is merely a synonym of Golpáttá, *Phœnix paludosa* of the Sundarbans. See Golpáttá.

Hmyone. See Fishing Implements.

Hogs' bristles and hogs' lard.

There is a certain amount of trade in hogs' bristles, which are chiefly brought to Calcutta from the North-West Provinces. Hogs' lard is, however, an unimportant article of trade. It is chiefly used for home consumption.

Holarrhena antidysenterica.

Syn.—*F. chites antidysenterica*.

Vern.—*Bengali*, Karchi; *Hindi*, Dudhi, Kuar; *Tamil*, Kulup-palāi-virai; *Telugu*, Amkudu-vittum; *Burmese*, Leton-kgyi.

A small tree, common in Sub-Himalayan tracts, Bengal, Central and Southern India. The bark is bitter and astringent, and is a valuable remedy for dysentery; it is also prescribed in hæmorrhoids and fever. Mr. Gamble, in his "Manual of Indian Timbers," states that at Saharanpur and Dehra Dún, in the North-West Provinces, the wood is largely used in carving ornamental boxes, glass-frames, toys, &c. In Assam it is used for cabinet-work, and in South India for turning. The leaves, the fruit, and the seeds are also prescribed in dysentery. Beads made of the wood are used in Assam as a medicine. Medicine

Hopea odorata.

Vern.—*Burmese*, Thingan.

A large evergreen tree of British Burma and the Andaman Islands. The tree yields a very strong wood used in house-building and making canoes. It also yields a yellow resin. Timber.
Gum.

Hops. * (*Humulus lupulus*.)

The cultivation of hops in the Himalayas was undertaken some years ago as an experiment. It has now been thoroughly acclimatised and, largely used by the breweries in the hills. The present sample has been supplied by the Murree Brewery.

Hordeum hexastichum or **vulgare.** *Barley.*

Vern.—*Bengali*, Jab; *Hindi*, Jau; *Tamil*, Barley-arisi; *Telugu*, Barley-biyam; *Burmese*, Mu-yau.

Barley is largely cultivated in the North-Western Provinces and the Food.

Punjab, where it is extensively used as food by the poorer classes. The average produce is about 8 cwts. per acre. There is no export trade in this grain.

Humulus lupulus. *See Hops.*

Hydrarg. chloridum-cum-bichlorida.

Vern.—*Bengali*, Rasakarpur.

Medicine.

Sample supplied by Dr. K. L. Dey, who states that this preparation of mercury holds an important place in Indian commerce. It is extensively used in medicine as an alterative and fumigatory.

Hydrargyri-per-sulphuretum. *See Cinnabar.*

Hydrocotyle asiatica. *Asiatic Pennywort.*

Vern.—*Bengali*, Thulkuri; *Tamil*, Vullari-kire; *Telugu*, Munduka-brummi.

Medicine.

A small herbaceous plant, found in damp places in Bengal and Southern India. Dr. K. L. Dey states that "the leaves, which are bitter, are toasted and given in infusion to children in bowel complaints and fevers. They are also employed as anti-inflammatory in pains and bruises. This plant is considered to possess powerful alterative properties, and on the Malabar Coast reported as an excellent specific in leprosy, but further trials are necessary to substantiate its properties."

Hyoscyamus niger. *Henbane.*

Vern.—*Bengali*, *Hindi*, Khorásáni ajowan; *Tamil*, Kurasháni-yomam; *Telugu*, Kurasani-vamam.

Medicine.

As the name implies, it was originally a native of Central Asia. It is now cultivated in India, in the Saharanpur Botanical Gardens and in the neighbourhood of Agra and Ajmir. The plant contains an alkaloid, called hyosciana, resembling atropia, which acts as a narcotic and antispasmodic, and is used as a substitute for opium. Both the leaves and the seeds are used in medicine, but the latter are more powerful. *Hyoscyamus* has been found extremely useful in all kinds of pulmonary affections and cerebral diseases.

Ichnocarpus frutescens.

Vern.—*Bengali*, Syámálatá; *Hindi*, Dudhi; *Telugu*, Nela-tiga.

Fibre.

A climbing shrub, found in the jungles. The slender stalks are used as strings to make bamboo fishing-cages. The roots are used in medicine

and possess alterative and tonic properties. They are often mixed with those of *Hemidesmus indicus*. A decoction of the leaves and stalks is given in fever. Medicine.

Indigofera tinctoria. *Indigo.*

Vern.—*Bengali, Hindi, Nil, Tamil, Nilam; Telugu, Nili-mandu.*

The most valuable dye-stuff in India, and the only one which produces a blue colour. It is cultivated all over India, but chiefly in Bengal, North-Western Provinces, and Madras. The manufacture of indigo was formerly entirely in the hands of European capitalists, but of late large numbers of natives have taken up the industry. Mr. Liotard states that "good indigo is known by its fine purple-blue colour, and by its clear fracture when the two corner ends of a tablet are pressed with the fingers. The fracture, when rubbed with a hard, smooth surface, exhibits a copper-red lustre." The quantity of indigo exported from India during the five years ending 1880-81 was as follows:—

	Quantity. Cwts.	Value. £
1876-77	100,384	2,962,785
1877-78	120,605	3,494,334
1878-79	105,051	2,960,462
1879-80	100,923	2,947,226
1880-81	116,870	3,571,581

There is an extensive inland trade in indigo seed between the North-Western Provinces and Bengal, as the N.-W. Provinces seeds are only used for sowing in Bengal. Indigo seed is said to yield an oil by expression, but is rarely extracted. The legumes are sometimes used as fodder. Dr. K. L. Dey states that indigo leaf is used as an alterative in hepatitis; the root as an antidote for poisons generally, and given in decoction in calculas; powdered indigo was used in epilepsy in Germany, but with uncertain results. An ointment of macerated indigo is applied around the navel in uremia. In the Punjab it is applied to severe ulcers, especially in horses; and the powdered seeds are used as a local application for ophthalmia, boils, and dropsy. Medicine

Ipomoea turpethum. *Turpeth Root.*

Vern.—*Bengali, Teuri; Hindi, Turbud.*

The powdered root, mixed with sugar, is given as a mild purgative. Mr. Baden-Powell states that it is used by Muhammadan doctors in paralysis, gout, and leprosy, and diseases of the mucus membrane. Medicine.

Iron ore.

Iron is found in almost all the hilly districts of India, but worked only in a few places. The demand in the sea-port tracts is entirely supplied

by imported iron. The present sample is obtained from the Jaipur State, where iron-smelting is extensively carried on. Government has now shown its readiness to encourage iron-smelting being undertaken in the country with European capital.

J

Jade.

Sample of jade has been supplied by Mr. H. B. Medlicott, Superintendent, Geological Department. It has been obtained from the mines worked by the Chinese in mica and hornblende schists of the Karakush Valley, on the southern declivity of the Kménlin range, as described by Dr. Stoliczka in the Records of the Geological Survey of India, Volume VII, page 51, 1874.

Jambosa vulgaris. *See* *Eugenia Jambos*.

Japutty Fibre. (Unidentified.)

This sample was sent to the Government of India during the collection of articles for the Paris Exhibition. It is not known where it came from.

Jatropha Curcas. *The Physic Nut.*

Vern.—*Bengali*, Bagbheranda; *Tamil*, Kát-amunak; *Telugu*, Nepalam; *Burmese*, Thinhan-kyeksu.

A soft-wooded evergreen plant, indigenous to America, cultivated in India chiefly as a hedge plant. The juice of the plant forms a lather, like soap, which is applied to ulcers. The seeds yield an oil used for burning, also in medicine as a purgative and emetic. *See also* *Onosma echiodides*.

Jebo. (Unidentified.)

A grass, found in the rainy season among the rice-fields of Bengal. It is used as a green fodder.

Jhan. *See* Fishing Implements.

Jhinjori gum. (Unidentified.)

Sample received from the North-Western Provinces; purchased at Cawnpore, where it is brought from the forests south of the Jumna. The gum seems to be a mixed one.

Jonka. (Unidentified.)

A small shrubby plant, found under shades in Bengal. A decoction of the whole plant is given in coughs.

Juglans regia. *Walnut.*

Vern.—*Persian*, Charmághz; *Hindi*, Akhrot.

A large tree, wild in the Himalayas, and also cultivated largely in Afghanistan and Kashmir. The fruit of the wild tree has a small kernel, which is rarely eaten; that of the cultivated varieties is largely exported to the plains. A clear oil is extracted from the fruit, which is used for culinary purposes, as well as for burning in lamps. The bark is used as a dye and as an astringent medicine, and is largely exported to the plains. Women use it as toothsticks, and it is said to prevent tartar and to give a red colour to the lips. The rind of the fruit is also used in dyeing and tanning, and the tender branches and leaves are given to cattle as fodder. The wood is very valuable, and is largely used in furniture work.

Fruit.

Oil.

Dye.

Medicine.

Timber.

Juniperus communis *The Juniper.*

Vern.—*Punjabi* Nách, Káma, Pethrá, Abul, &c.

A large shrub of the North-West Himalayas. The wood, the twigs, and the leaves are burnt as an incense; the fruit, which is sweet, aromatic, and resinous, is used in medicine as a stimulant and diuretic. The berries are used in Europe to flavour gin.

Perfume.

Medicine.

Juniperus excelsa. *The Himalayan Pencil Cedar.*

Vern.—*Punjabi*, Chalai; *Hindi*, Padam.

A moderate-sized tree of the North-West Himalayas, and the mountains of Afghanistan and Beluchistan. The wood is used for house-building; it is also burnt as an incense.

Timber.

Justicia Adhatoda. *See Adhatoda Vasica.*

Jute. *See Corchorus olitorius.*

K

Kadone. *See Fishing Implements.*

Kaing grass. (Unidentified.)

A grass found in the jungles of Burma. It has been found by experiment to be well suited for paper manufacture.

Paper stock.

Kala-khatmi. (Unidentified.)

A native drug sold in the Calcutta bázár; properties not known.

Medicine.

Kanak-champa. (*Pterospermum acerifolium.*)

Vern.—*Burmese*, toungpetwoon.

Medicine.

A tall useful timber tree, with thin, grey, smooth bark; found in the Sub-Himalayan tracts, Bengal, and Burma; often planted for ornament. The flowers are regarded as a general tonic.

Kanchera grass. (Unidentified.)

Fodder.

A grass found in the rice-fields and marshes of Bengal; used as a green fodder in the rains.

Kankla. (Unidentified.)

Sanskrit, Kakkolaka; *Hindi*, Sitalchini.

Medicine.

A native drug sold in the bázár; properties not known; berries contain a black, aromatic, waxy substance.

Kanta-gurkamri. (*Capparis sepiaria.*)

Vern.—*Telugu*, Nalla uppi.

Medicine.

Grows in Bengal and South India; used as a febrifuge.

Karadi addadai. (Unidentified.)

Fibre.

A fibre sent by the Madras Forest Department.

Karaju. (Unidentified.)

Medicine.

A native drug sent from Kumaun; properties unknown.

Karti-karal skin. (Unidentified.)

A sample has been sent by Babu Ambá Datt Joshi.

Kastura. (Unidentified.)

A shell brought from the Sunderbans; it is burnt into lime for building purposes.

Katchhal. (Unidentified.)

Medicine.

A native drug sold in the bázár; properties unknown.

Kaurang-jowan. (Unidentified.)

Medicine.

A native drug sold in the Calcutta bázár; properties unknown.

Kedra grass. (Unidentified.)

Fodder.

A grass found in the rice-fields and marshes of Bengal; used as a green fodder in the rains.

Kekal. (Unidentified.)

A fresh-water fish of Bengal; sold in the Calcutta market in the dried Fish, state.

Keun. (*Costus speciosus*.)

Vern.—*Sanskrit*, Kemuka; *Hindi*, Kena; *Telugu*, Kimuka koshtamu.

A very elegant plant, found near the banks of rivers and other moist Medicine, and shady places in Bengal and South India. Used in medicine to allay thirst.

Khala. (Unidentified.)

A substance, said to be used in perfumery, sent from Kumaun by Perfume. Babu Amba Datt Joshi.

Khilkra. (Unidentified.)

A fibre sent from the Garo Hills, Assam.

Fibre.

Khir-kankla. (Unidentified.)

A native drug sold in the Calcutta bazar; properties unknown.

Medicine.

Kid-skin.

A large trade is carried on in this article; a sample has been sent by Babu Amba Datt Joshi of Kumaun.

Konesinbyan. See Fishing Implements.

Korki. (Unidentified.)

A sample of fibre received by Government during the collection of Fibre, articles for the Paris Exhibition of 1878.

Kudru-gum. (Unidentified.)

A mixed gum, sold in the Cawnpore market, brought from Bundel- Gum, khand.

L

Lac. See *Coccus Lacca*.

Lactuca Scariola (var. *sativa*). *Lettuce*.

Vern.—*Hindi*, Kahu.

Lettuce is grown as a garden vegetable. It contains a crystalline substance called lactucering. In native medicine it is used as a demulcent, and in European medicine as an anodyne in phthisis, rheumatism, and gout; it is also reckoned as a purgative, antispasmodic, and antiaphrodisiac. Medicine.

The inspissated juice is employed in dropsy, rheumatism, and hooping cough as an anodyne, diaphoretic, and diuretic

Lagenaria vulgaris. *Pumpkin, or Bottle Gourd.*

Vern.—*Bengali*, Lau ; *Hindi*, Kaddu, Tumba ; *Tamil*, Soriai-kai ; *Telugu*, Sorakaya.

Food.

Gourd is largely cultivated in all parts of India ; the fruit and the tender stalks with leaves are eaten as vegetable. The fruit, when dried, becomes hard, and is used for making stringed musical instruments, called *sitar* and *tanpura*, and sometimes used by mendicants as water or alms vessels. The seeds give an oil, used for external application for headache.

Lagerstrœmia parviflora.

Vern.—*Bengali*, Sida ; *Hindi*, Bakli, Katdhaura, &c. ; *Dakhini*, Nana ; *Telugu*, Chanda ; *Burmese*, Tsambelay.

Timber.

A large deciduous tree, found in the Sub-Himalayan tracts, Bengal, Assam, Central and South India. The wood is hard, seasons well, works easily, and is fairly durable ; used as railway sleepers, for agricultural implements, and in cabinet-work. A gum is obtained from the bark ; bark used in tanning. Tasar silk-worm feeds on the leaves.

Gum.
Tan.

Lagerstrœmia Flos—Reginæ.

Vern.—*Bengali*, Jarul ; *Tamil*, Kadali ; *Burmese*, Pymma.

Timber.

A large deciduous tree of Eastern Bengal, Assam, Burma, and the Western Coast. The most valuable timber tree in Eastern Bengal, and in Burma only inferior to teak ; it is used for ship-building and all kinds of construction. The tree yields a resin.

Gum.

Lathyrus sativus. *The Chickling Vetch.*

Vern.—*Bengali*, Teora ; *Hindi*, Khesâti.

Food.

Largely cultivated on alluvial soils. The seed is split and eaten cooked 'like other pulses ; it is, however, hard and indigestible, and its frequent use is said to bring on palsy of the lower limbs. Its chemical composition is stated to be nitrogenous matter, 31.50 per cent. ; starchy matter 54.26 ; fatty or oily matter, 0.95 ; mineral constituents, 3.19 ; moisture, 10.10.

Lawsonia alba. *Henna.*

Syn.—*L. inermis.*

Vern.—*Bengali*, *Hindi*, Mehdi ; *Tamil*, Aivanam ; *Telugu*, Gora.ta.

Dye.

A small shrub, common all over India as a hedge plant. The fresh leaves, with the addition of a little Catechu, is made into a paste with which native women dye the palms of their hands and finger-nails a dull orange colour ; it is also used for dyeing the hair. Dr. Roxburgh states :—

"The leaves yield in decoction a porter-coloured liquor. I have found it a deep

orange colour which acids destroy, while alkali and infusions of astringent vegetables deepen it. This decoction dyes the finger a deep orange, but does not communicate any colour variously prepared, nor could I produce any precipitate from the decoction worth attending to."

A decoction of the leaves is occasionally used in dyeing cloth a light reddish-brown shade, known as malagiri. Ottos and perfumed oils are also made from the *henna* leaves. Mr. Baden-Powell says that it contains a peculiar sort of tannic acid, and is sometimes applied as an astringent remedy for ulcers in the mouth, and in other cutaneous affections. In South India an infusion of the leaves is used in bruises. The seeds yield an oil.

Perfume.

Medicine.

Oil.

Licopersicum esculentum. See Tomato.

Lepidium sativum. Cress.

Vern.—Sanskrit, Chandra-sura; Hindi, Hālim; Tamil, Ali-virai; Telugu, Adityalu.

Cultivated in gardens as a vegetable. Sanskrit writers have described the seed as tonic and alterative, efficacious in hiccup, diarrhoea, and skin diseases. By Muhammadan doctors it is used as a tonic, laxative, anti-scorbutic, and a gentle stimulant in dyspepsia. The oil extracted from the seeds is also used in medicine.

Medicine.

Ligusticum diffusum. (Reduced to *Seseli indicum*.)

Vern.—Bengali, Banjowan.

Sample sent by Dr. Kanny Lall Dey, who states that it is used as a carminative.

Lime-juice. See *Citrus acida*.

Limestone.

Limestone is found in almost all parts of India. In Calcutta the lime obtained from the rocky hills of Silhet is greatly valued, but ordinarily the calcareous concrete found under earth, in the form of nodular masses, is burnt with cowdung and made into lime for building purposes. This substance, known by the name of *ghuting* in Bengal, and *kunkur* in North India, is extensively used for metalling roads. Lime obtained from white marble at Jaipur gives a transparent colour on the walls washed with it, and this is one of the most pleasing features in the houses of that town.

Mineral.

Linum usitatissimum. Linseed; Flax.

Vern.—Bengali, Tisi, Masina; Hindi, Alsi; Tamil, Alshi-virai; Telugu, Atasi.

Linseed is largely cultivated in Bengal and North-West Provinces. It is one of the most important of the oil-seeds of India. The chemical

Oil.

composition of the seeds has been found to be, in one hundred parts, mucilage 15·12, chiefly in the seed-coat; 11·26 fatty oil in the nucleus; emulsion 44·38 in the husk; besides a small proportion of wax, starch, resin, &c.

The varieties known in commerce are small and bold. The seeds are also distinguished for their colour,—brown, white, and red. The oil is obtained by expression, and is either cold-drawn or subjected to a heat of 200°; when cold-drawn, the colour is greenish and more viscid than when hot-drawn. It is used as a drying oil in the manufacture of paints, varnishes, printing ink, &c. The exports of linseed during the five years ending 1880-81 were as follow:—

	Quantity. Cwt.	Value. £
1876-77	5,614,617	3,015,437
1877-78	7,198,918	4,224,429
1878-79	3,503,795	2,189,211
1879-80	3,105,058	2,030,602
1880-81	5,697,172	3,698,126

Medicine.

In medicine linseed is used for poultices, and also taken internally in bronchial affections, diarrhœa, dysentery, visceral inflammation, and special diseases. As the plant is cultivated for seed, and not sown close to make the stems grow straight and without branchlets, the fibre produced is of a very inferior quality; and, indeed, very little fibre is extracted, the stalks being burnt as fuel. It may be utilised for paper-making.

Fibre.

***Luffa acutangula.* Gourd.**

Vern.—*Bengali*, Jhinga; *Hindi*, Tarui; *Tamil*, Pikunkai; *Telugu*, Birakai; *Burmese*, Tha-bwat-nha-wai.

Food.

Largely cultivated for its fruit, which is used as a vegetable in the rainy season. The kernel of the seeds is powdered and taken as a snuff for neuralgic headache.

Luffa ægyptica.

Vern.—*Bengali*, Dhundul; *Hindi*, Ghia-tarui.

Food.

Cultivated as a vegetable. When over-ripe and after exposure to the atmosphere, the cellular tissue becomes absorbed, leaving a mass of netted fibres, now generally used in the bath-room. The seeds are used as a

Medicine.

cooling medicine.

M

Machilus odoratissima.

Vern.—*Hindi*, Dáichhini, Mithá-pátá.

Timber.

A large tree of the Himalayas, Khasia Hills, and Burma. It is common near Darjiling, where the wood is largely used for building purposes,

chiefly for native houses. This is the noted *súm* tree of Assam, on the leaves of which the Múga silk-worm (*Antheræa Assama*) feeds.

Maize. See *Zea Mays*.

Malachra capitata.

A fibre plant newly introduced into India. The sample sent to Amsterdam was from the Bhadgaon Farm, Bombay. Fibre.

Malancha. (Unidentified.)

A grass found in the rice-fields of Bengal; used as a green fodder in the rains. Fodder.

Mal-kekra. (Unidentified.)

A grass found in the rice-fields and marshes of Lower Bengal; used as a green fodder in the rains. Fodder.

Mallotus Philippinensis. *Indian Kamila.*

Syn.—*Rottlera tinctoria*.

Vern.—*Bengali*, *Hindi*, Kamila-guri; *Tamil*, Kamela-mavu; *Telugu*, Kapila-pindi; *Burmese*, Tau-ti-din.

A small forest tree, found in all parts of India. The most important produce of the plant is the powder covering the ripe fruit, used as a dye, specially for silk, to which it imparts a fine yellow colour. It does not require a mordant. It is also used in medicine as a purgative and anthelmintic. The bark is used for tanning. An oil, obtained from the kernel of the fruit, is used as a cathartic. Dye. Medicine. Tan. Oil.

Malva rotundifolia.

Vern.—*Hindi*, Sonchala, Khabázi.

Seeds demulcent, used in bronchitis, cough, inflammation of the bladder, and hæmorrhoids, the leaves also possess similar properties. Medicine.

Man. (Unidentified.)

A fibre sent from the Garo Hills in Assam.

Fibre.

Manganese ore.

Sample supplied by H. B. Medlicott, Esq., Superintendent, Geological Survey of India, who writes:—

"Pyrolusite, with psilomelaner, occurring in the laterite at Gosulpur, Jabalpur District, Central Provinces, contains manganese 54.66 per cent.; iron, 3.17; phosphoric acid, 0.28; no sulphur; available oxygen, 15.26 per cent.—Described by Mr. Mallet in *Records, Geological Survey of India, Volume XII, page 99, 1879.*"

Mangifera indica. *Mango.*

Vern.—Sanskrit, Amra; Bengali, Amb; Hindi, Am; Tamil, Mampazham; Telugu Mamidi-pandlu.

A large tree, cultivated almost in all parts of India for its fruit, which is reckoned by the natives as the most delicious fruit in India, but Europeans do not seem to appreciate the varieties most admired by natives. The *Ramayan* says that the mango was brought to India from Ceylon. The unripe fruit is made into pickles and also sliced and sold in the bázár in the dried state; ripe fruits are made into jam. The bark and the leaves yield a yellow dye, which is but rarely used; the dried unripe fruit is, however, used in dyeing as a mordant or a purifier of other substances. A pink-coloured gum exudes from the tree in small quantities. The seed inside the stone is used for food by the poorer classes, especially in times of scarcity. It is astringent and a valuable remedy in leucorrhœa.

Maranta arundinacea. *Arrowroot.*

A native of the West Indies, now acclimatised in India. It produces the best kind of arrowroot. A sample of arrowroot grown by Messrs. Speed & Co. at Alipur, near Calcutta, has been sent to Amsterdam.

Maranta dichotoma.

Vern.—Bengali, Pāti; Burmese, Then.

Grows in Eastern Bengal, Assam, the Coromandel Coast, and Burma. The stems are split and made into very smooth mats, which, owing to their coolness, are largely used in the hot weather for sleeping on. Some of the finest ones cost about £5 each.

Marsdenia Roylei.

Vern.—Hindi, Murkulā.

A large knotty creeper of the outer ranges of the Himalayas. The plant is cut in the knots and boiled in alkaline ashes to loosen the outer bark, which, when taken out, discloses a fibre inside, of which fishing-nets and ropes of great strength are made. It is also suitable for the manufacture of textile fabrics.

Matricaria Chamomilla. *Chamomile.*

Syn.—*Anthemis nobilis*.

Vern.—Bengali, Hindi, Babān-phul; Tamil, Chamaindu-pu.

A native of Europe and Persia, imported into India from the latter country. The flowers are aromatic, bitter in taste, and considered tonic, carminative, and anodyne, "used with advantage in the suppression of the

menstrual discharge, in puerperal fever, and in after-pains; also in gout and intermittents, and in constitutional debility, dyspepsia, and in all cases where the tone of the digestive organs, or the system generally, is depressed. Externally, chamomile flowers are applied as a discutient and emollient, and in the form of glyster in colic, dysentery, and hernia. They may be used either in powder, infusion as tea, or in decoction, or extract. The essential oil obtained by distillation possesses antispasmodic powers in a higher degree." In the Punjab, *Matricaria Chamomilla* is found wild in the plains, and the flowers, under the name of *Bābuna*, prescribed as a tonic and febrifuge, exert the same influence, and have the same powers, as those of the *officinal* species. The oil is also used as a liniment in rheumatism. Oil.

Mats.

Mats are manufactured all over India. The substances generally employed in making mats are bamboo, ratan cane, different kinds of grasses, cocoanut and other fibrous substances. The samples sent are coir matting from Midnapur and aloe fibre matting from Hazaribagh, as also different sorts of mats purchased at Calcutta.

Coir brush mats are made from Maldivé and country cocoanut fibre. Mats of this kind made at the Midnapur Jail have a good reputation, and sell well in Europe. These are in great demand for covering the floors of passages, staircases, &c.

The ground colour of Hazaribagh aloe fibre matting is a dark shade of drab, stripe in centre. The matting is of superior quality and of great durability. It is an excellent material for covering the aisles of churches and the saloons of ships and steamers.

The mat made from the sedge known as the *madur-kati* (*Cyperus tegetum*) is universally used in Calcutta for covering floors, of which the fine ones are known as the Masland mats. These are very beautiful in make and cool in the hot weather.

Mayda-lekri. See *Tetranthera monopetala*.

Mayna. (Unidentified.)

A grass found in the rice-fields and marshes of Lower Bengal; used as fodder a green fodder in the rains.

Melia Azadirachta. (*M. indica* in Brandis' Forest Flora.) *Nim Tree*.

Syn.—*Azadirachta indica*.

Vern.—*Sanskrit*, Nimba; *Bengali*, Hindi, Nim; *Tamil*, Vepum-maram; *Telugu*, Vepu; *Burmese*, Thombau-ka-makah.

A large tree, found almost in all parts of India, but it thrives luxuriantly

in the dry climate of the North-West Provinces. Every part of the tree is intensely bitter; the bark possesses febrifuge, astringent, and alterative properties, much used in fevers and cutaneous diseases; a poultice of the leaves hastens maturation of boils; the saccharine juice, which sometimes exudes from the tree, and the gum, are used in leprosy and asthma. The seeds are aromatic, and yield an oil very bitter and disagreeable in taste, which is held as an anthelmintic stimulant, and a valuable remedy for skin diseases, specially leprosy. Many other virtues are ascribed to the Nim tree, and it is held in great veneration from very ancient times. The bark yields a fibre of which a sample has been received from the Madras Forest Department. The wood is hard and is used for posts and agricultural implements, and in South India for ship-building and furniture.

Memecylon edule. (*M. tinctorium*, Kaen.) *Ironwood Tree.*

Vern.—*Dakhini*, Ajan; *Tamil*, Kasha-elai; *Telugu*, Alli-aku.

A small tree of South India and Burma. The flowers and the leaves are extensively used in dyeing. A cold infusion of the leaves imparts a yellow dye; a crimson dye is also obtained from them. Dr. Bidie states that the leaves produce "a delicate yellow lake," and also yield a red dye used along with sappan wood and myrabolams to colour cotton cloths and mats. An infusion of the leaves is used in inflammation of the conjunctiva.

Mentha sativa. *Marsh Mint.*

Vern.—*Bengali*, *Hindi*, *Podinā*.

Cultivated in gardens. The dried plant is largely used in medicine as refrigerent, stomachic, and stimulant. With some acid fruit it is made into *chutney*.

Mesua ferrea.

Vern.—*Bengali*, *Hindi*, *Nágkesar*; *Tamil*, *Nangal*; *Telugu*, *Nága Kesara*; *Burmese*, *Ganjan*.

A large evergreen tree, found in Bengal, Assam, South India, and Burma. The tree is often planted for its handsome flowers, which perfume the air to a great distance. The dried buds are considered a mild remedy for coughs with profuse expectoration. An oil is extracted from the seeds by expression, which is considered an excellent remedy for cutaneous affections. The wood is hard, used in building bridges, furniture, &c., and is suited for railway sleepers.

Mica.

Mica is chiefly found in the Chhota Nagpur hills in Bengal; in the Vindhya hills in Behar, and in the Northern Circars in the Madras Pre-

sidency. It is composed of almost equal parts of silica and magnesia, with six parts of lime. It readily splits into transparent flakes, and is used in making lamps for illumination in marriage processions, native paintings, toys, &c. There are two kinds of mica sold at the Calcutta market, one white and the other black in colour. Both sorts are used in native Medicine. medicine.

Michelia Champaca.

Vern.—*Bengali*, Hindi, Champá; *Tamil*, Shimbu; *Telugu*, Champakamu; *Burmese*, Tsaga.

A tall evergreen tree, cultivated throughout India for its fragrant flowers, which are given as an offering to the gods, and of which a perfume is made. The bark is bitter and aromatic, useful in intermittent fevers and in promoting menses. The aromatic *sampanghi* oil of Madras is obtained from this tree. Perfume. Medicine. Oil.

Mimusops Elengi.

Vern.—*Bengali*, Bakul; *Hindi*, Maulsri; *Tamil*, Magadam; *Telugu*, Pogada; *Burmese*, Khaya.

A large evergreen tree, cultivated throughout India, found wild in the forests of South India and Burma. The fruit is eaten, but it is not pleasant. A perfume is made of the star-shaped flowers. The bark is astringent, used in tanning, and as a febrifuge and tonic medicine. A decoction of it is used as a tooth gargle. Wood used for house-building and furniture. Fruit. Perfume. Tan. Medicine. Timber.

Mimusops Kauki.

Vern.—*Bengali*, Khir-khejur; *Hindi*, Khirni; *Tamil*, Palla; *Telugu*, Pali-panlo.

Cultivated in gardens for its fruit. The tree is, however, not very common, and is found wild only on sandstone soils in the mountains of Central and South India. The wood is hard, even-grained, and durable. A clay model of the fruit has been sent. Fruit. Timber.

Molæ. (Mylabris Cichorii.)

Dr. Kanny Lal Dey has supplied the sample. He gives the following description of its use in his "Indigenous Drugs of India":— Medicine.

"Molæ Cichorii is an insect of the order *Coleoptera*, common in the neighbourhood of Dacca, in the Haidarabad district, and numerous other localities. This fly, if procured before the nites have commenced its destruction, yields, on the average, one-third more cantharidin than the Spanish fly of the European shops. Its actions on the human system, and uses in therapeutics, are similar to those of the Spanish fly (*Cantharis viscaria*), for which it is an adequate substitute. (Price 1 rupee 8 annas per lb.)"

Momordica Charantia.

Vern.—Bengali, Uchchhe, Karelá; Hindi, Karelá.

Cultivated all over India for its fruit, which is eaten as a vegetable and made into preserves and pickles. There are two varieties, one with a small round fruit and the other longer. It is bitterish in taste, acts as an anthelmintic, stomachic, and a cool laxative, useful in piles, jaundice, and special diseases. The juice of the fresh leaves is given to children as a mild purgative.

Morinda citrifolia and nearly allied to it **M. tinctoria.**

Vern.—Bengali, Ach; Hindi, Al; Tamil, Manja-pavattay; Telugu, Maddi-chettu; Burmese, Yai-yoe.

A small tree, extensively cultivated in many parts of India for the roots, which yield a red dye. In the North-Western Provinces it is chiefly cultivated in Bundelkhand, south of the Jumna, where the town of Maura-nipur has long been famous for the manufacture of a red cloth called *kharua* which is dyed with the *Al* root. In Madras, Dr. Bidie states, it is a common tree in dry soils. The colour imparted by *Al* is fixed by alum and is permanent. The price of the root is about 2½d. per lb.

Moringa pterygosperma. *The Horse-radish Tree.*

Vern.—Bengali, Hindi, Sajna; Tamil, Moranga; Telugu, Saihan; Burmese, Daintl.

A middle-sized tree, found wild in the Sub-Himalayan regions, and cultivated in India and Burma for its leaves, flowers, and fruit, which are eaten as a vegetable and pickled. The root-bark, which smells like horse-radish, is poisonous, and is used as a vesicant and considered a good remedy in bites by rabid animals, in paralysis, epilepsy, and hysteria. The seeds also possess pungent and stimulant properties, and they yield an oil similar to the *Ben oil*, which is considered aperient and is much used in gout and rheumatism. Large quantities of gum are obtained by excision made in the bark, which is used as an external application in headache and pain in the limbs. The bark yields a coarse fibre, suited for the manufacture of mats, paper, and rough cordage.

Morus alba and **nigra.** *Mulberry.*

Vern.—Bengali, Tút; Hindi, Shahtút.

Cultivated in Kashmir, Punjab, Bengal, and other parts of India for its leaves, upon which the silk-worm feeds. The tree attains to a moderately large size if allowed to grow, but for the purposes of the leaves it is usually cut down as soon as it grows to a height of 4 or 5 feet. The fruits are eaten either fresh or dried. Clay models of the fruits of both varieties have been sent. The fruit of *M. nigra*, called *shahtút* in Hindi, contains sugar

Food.

Medicine.

Oil.

Gum

Fibre.

Fruit.

and tartaric acid, used by Muhammadan doctors in sore throat, dyspepsia, *Medicine.* melancholia, and as a refrigerent in fever. The bark is regarded as a purgative and vermifuge.

Morus serrata.

" Vern.—*Punjabi*, Karún, &c. ; *Hindi*, Kimu.

A large deciduous tree of the North-Western Himalayas, valuable for its wood, which, Mr. Gamble states, "works well, does not warp, and Timber. takes a beautiful polish, showing a golden lustre; is used for troughs, agricultural implements, and for cabinet-work; is much esteemed by the Simla Wood-carvers."

Mosa pèndu. (Unidentified.)

A fibre received from the Madras Forest Department.

Fibre.

Mother-of-Pearl. See Shells.

Mucuna pruriens. *The Cowhage Plant.*

Vern.—*Bengali*, Alkushi; *Hindi*, Kiwach; *Tamil*, Penekáli; *Telugu*, Pilladugukailu.

A climbing shrub, found wild in Bengal and the forests; cultivated in Food. some parts of Upper India for its pods, which are used as a vegetable. The hairs covering the seed-pods, called cow-itch, stick to the skin and produce an intolerable itching. Cow-itch is administered internally as a vermifuge. The seeds are considered efficacious in special diseases and *Medicine.* are also supposed to be a good nerve tonic.

Mugri-phal. (Unidentified.)

A substance used in native medicine; purchased at the Calcutta Medicine. market.

Mulu. (Unidentified.)

A fibre sent from Kumaun.

Fibre.

Mundi-phal. (Unidentified.)

A substance used in native medicine; purchased at the Calcutta Medicine. market.

Munj grass. See Saccharum Munja.

Mura-mansi. (Unidentified.)

A substance used in native medicine; purchased at the Calcutta Medicine. market.

Murkula. See Marsdenia Roylei.

Murraya Koenigii.

Vern.—Bengali, Barsangh; Hindi, Gani, Gandla; Tamil, Kampwepila; Telugu, Karepak.

Spice.
Oil.
Medicine.

A small tree of the outer Himalayas, South India, and Burma. The leaves are used for flavouring curries; the seeds yield a clear, transparent oil, called *simboli* oil; the root is slightly purgative. Both the root and the bark are considered stimulant and are used in skin diseases and to check vomiting.

Musa paradisiaca, The Plantain, and M. sapientum, The Banana.

Vern.—Sanskrit, Kadali; Bengali, Kalá; Hindi, Kelá; Tamil, Vazhaip-pazham.

Fruit.

Extensively cultivated throughout India, but especially at the chief seaboard. The fruit of the former is eaten fresh, of the latter generally cooked in curries. There are many varieties of each, differing in size and flavour. Plantains do not seem to be exported from India, although they might easily enough be taken, the fruit being cut before it ripens. The flowers are eaten as a vegetable. A beautiful fibre can be obtained from the stems, inferior, however, to the Manilla hemp (*Musa textilis*) in the manufacture of rope and cordage; but it can be used for paper-making, for which the leaves are also suited. The plant fruits only once, after which it is cut down and either used as fodder or thrown away. A black dye is obtained from the rind of the unripe fruit of some varieties. An alkaline ash is obtained by burning the dried leaves and leaf-stalks, which can be used for washing clothes instead of fuller's earth. The flower is considered cool and astringent, very useful in diabetes. The root is a valuable fodder.

Fibre.

Dye.

Medicine.

Musa textilis, Manilla Hemp.

Fibre.

A native of the Philippine Islands, now thoroughly acclimatised in the Madras Presidency. The Indian produce, however, has not as yet become an article of commerce. Dr. Royle states that "among the various substitutes for hemp, few have hitherto attracted more attention than Manilla hemp, and this from the elegance of its appearance, combined with the power of bearing great strains, as well as from being very durable, lighter, and also cheaper than Russian hemp."

Myinwoon. See Fishing Implements.**Myrica sapida. Box Myrtle.**

Vern.—Bengali, Hindi, Kaiphal; Telugu, Kaidaryamu.

A moderate-sized evergreen tree, found in the outer Himalayas, Khasi hills, and the hills of Burma. The fruit is edible, having a

sweetish bitter taste. The bark is exported to the plains, and is used in medicine as a hot and aromatic stimulant, and externally applied in the form of plaster in the treatment of rheumatism. It is used in the Khasia hills to poison fish, and as a tanning agent in the North-West Provinces. About fifty tons of the bark are annually exported from the Kumaun forests. Medicine. Tan.

Myristica moschata. *Nutmeg; Mace.*

Syn.—*M. Officinalis.*

Vern.—*Bengali, Hindi, Jaiphal, Jaitri; Tamil, Jadikkai, Jadipattri; Telugu, Jajikaya, Japatri.*

A tree, originally native of Eastern Archipelago, now introduced into Southern India. Its produce is the nutmeg of commerce. A fine branching aril, of a vermilion colour, covers the nut of the fruit, which when dried is the mace, and the nut itself is the nutmeg. Mace contains a fragrant essential oil, a gummy principle and a woody fibre, and both mace and nutmeg are chiefly used as a condiment and as an aromatic adjunct in the preparation of various native medicines. An infusion of the nutmeg is recommended as a drink in cholera to allay thirst. The nut contains an essential and a fixed oil; the former is white, acrid, pungent, and smelling powerfully of nutmeg; the latter, called butter of nutmegs, occurs in flattened square masses, yellowish in colour, and solid. Spice. Medicine. Oil.

Myrsine africana.

Vern.—*Hindi, Báyabirang, Pahári-chá.*

A small evergreen tree of Central Asia and Western Himalayas. The fruit is a powerful anthelmintic, and is also used as a laxative in dropsy and colic. Dr. Balfour states that the gum obtained from the plant is considered a warm remedy and is used in dysmenorrhœa. Medicine.

N

Nagari gum.

A mixed gum, brought to Cawnpore from the forests of Bundelkhand. Gum.

Naluka. (Unidentified.)

A native medicine purchased at the Calcutta market; properties not known. Medicine.

Nara. (Unidentified.)

A grass found in the marshes and rice-fields of Lower Bengal; used as a green fodder in the rainy season. Fodder.

Nardostachys Jatamansi.

Vern.—*Bengali*, Jatámansi; *Hindi*, Bálbhar.

This plant occurs at high elevations of the Himalayas. Jatámansi consists of short pieces of an underground stem covered with a hairy fibre, supposed to be the *Nardus indicus* or *spikenard* of the ancients. It possesses in a high degree the same medicinal virtues as Valerian, and is regarded as an antispasmodic and a nerve tonic and useful in hysteria and epilepsy; also employed in jaundice, affections of the throat, and as an antidote for poisons. It is also used to scent and clean the hair. About 15 cwts. are annually exported from the Kumaun hills.

Medicine.

Perfume.

Narthex Assafoetida. *See* Ferula Narthex.**Nas.** (Unidentified.)

Fodder.

A grass found in the rice-fields and marshes of Bengal; used as a green fodder in the rainy season.

Nasat. (Unidentified.)

Medicine.

A native medicine purchased at the Calcutta market; properties not known.

Naucllea Cadamba. (Reduced to Anthocephalus Cadamba.)

Vern.—*Bengali*, Kadam, *Tamil*, Vella Kadamba, *Telugu*, Kadambe; *Burmese*, Máu.

Fruit.

Medicine.

A large deciduous tree, found in Bengal, the western coast of India, and Burma; often cultivated as an ornamental tree. Its flowers are given as an offering to the gods, and the fruit is eaten by the poorer classes. The bark is used in native medicine, and is supposed to possess febrifuge and tonic properties.

Nelumbium speciosum. *Lotus.*

Vern.—*Bengali*, Padma, *Hindi*, Kanwal; *Tamil*, Tamáray; *Telugu*, Tamara.

Food.

Medicine.

The lotus flower is highly venerated by the Hindus and is given as a valuable offering to the gods. There are two varieties common everywhere in India, one with a white and the other with a red flower. A third variety, having blue flowers, is found in Kashmir. It grows wild in marshes and tanks, and the leaves and flowers spring up from beneath the water. The root is two or three feet long, eaten boiled as a vegetable, and has a sweetish taste, somewhat like turnip. The filaments of the stalks are drawn out and made into lamp wicks for burning in the temples of Burma. The seeds found imbedded on the surface of the fruit are eaten raw when green, and roasted or boiled when ripe and hard. They are also strung into beads, and used medicinally as a tonic in disorders of

the digestive functions, and also as a demulcent, diuretic, and cooling medicine.

Nephelium Litchi. *Litchi.*

Vern.—*Bengali, Lichu.*

A fruit tree, originally native of China, now thoroughly acclimatised in many parts of India. The yellow pulpy coating of the seed is eaten which is, however, often very thin and sour in taste in the Indian varieties. The best litchi is obtained in the Muzaffarpur and Patna districts of Bengal. Fruit.

Nerium odorum. *Sweet-scented Oleander*

Vern.—*Bengali, Kumbi, Hindi, Kumyut, Tamil, Alin, Tluu, Ganneru.*

A small shrub, cultivated in gardens for its flowers, which are given as an offering to the gods. There are two varieties, one with red and the other with white flowers. The whole plant is poisonous, and is used in leprosy and skin diseases. The root is used to procure abortion. Medicine.

Ngayitsai. *See Fishing Implements.*

Nicotiana rustica and **Tabacum.** *Tobacco.*

Vern.—*Ber, uti, Tamak, Hindi, Tamaku, Tamil, Puzai ilai, Telugu, Pogaku, Burmese, Tsha.*

Tobacco was introduced into India about the year 1605 and is now cultivated all over the country and extensively used in the same way as in other countries,—viz, smoked in the pipe, chewed alone or with betel leaf, and taken as snuff. Smoking in a pipe made of cocoanut shell or of metal is, however, the universal practice. Tobacco thus smoked, called *guraku*, is prepared by an admixture of unrefined sugar and fragrant substances like patchouli leaf and rose otto. Many varieties of tobacco are known in India, of which some have been sent to Amsterdam. The principal seats of tobacco manufacture in India are Champaran, Purnia, Rangpur, Rajshahi, Kuch Behar, and Nadiya districts in Bengal, Trichinopoly in South India, and Arakan in Burma. The following remarks on the Arakan tobacco has been made by Colonel Sladen, the Commissioner:— Intoxicant.

“Tobacco of the best kinds can be grown in many parts of Burma, but the people fail in curing it and preparing it for the home market. Attempts are being made to remedy this state of things by educating the people in this branch of agriculture, and showing them what can be done with well cured tobacco. The high price of labour is a great drawback. At present, tobacco imported from India fetches a lower price in the market than the local product. The tobacco-fields of Arakan are situated in three different localities—(1) Hill Tracts, Northern Arakan, (2) Cheduba Island, Kyauk Phye, (3) the Sandoway district. Samples have been forwarded from each field.”

An experiment undertaken lately to cure and manufacture tobacco on the

Medicine.

American system by Messrs. Begg, Dunlop, & Co., of Calcutta, under the guidance of Mr. E. C. Buck, the former Director of the Department of Agriculture and Commerce of the North-West Provinces, has proved quite successful. Samples of tobacco thus cured have been supplied by Messrs. Begg, Dunlop, & Co. Two varieties of tobacco are known in Southern India—the Trichinopoly and the Lunkah tobacco. Trichinopoly is more acrid than the Lunkah. Dr. Bidie says that Pondicherry cheroots are sometimes quite equal to Havannahs. Large quantities of cigars are made in Burma. In medicine, tobacco is used as a narcotic. The quantity of tobacco exported from British India during the five years ending 1880-81 was as follows :—

	1876-77.		1877-78.		1878-79.		1879-80.		1880-81.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£
Unmanufactured	10,508,720	75,137	10,594,004	74,767	13,279,158	111,126	10,874,623	116,702	13,267,325	122,185
Cigars	190,136	11,744	189,742	14,394	196,759	12,178	130,324	9,763	207,005	15,995

Nigella sativa. *Small Fennel.*

Vern.—*Bengali, Hindi, Kalaunji; Tamil, Karun-shivagam, Nalia-jilakana.*

Medicine.

Extensively cultivated for its seeds, which in appearance resemble coarse gunpowder, and have a strong aromatic odour like saffron or cubebs. It is considered a stimulant, aromatic tonic, useful in disorders of the digestive organs, in rheumatism and fever, and in promoting secretion of milk after child-birth. The seeds are put within folds of woollen cloths to preserve them from the ravages of insects. They contain 5 to 10 per cent. of an essential oil. *Nigella* seed is largely used as a spice in cooking meat.

Oil.

Spice.

Nirbishi. (Unidentified.)

Fodder.

A grass found in the marshes and rice-fields of Lower Bengal; used as a green fodder in the rains.

Nulche. (Unidentified.)

Fodder.

A grass found in the marshes and rice-fields of Lower Bengal; used as a green fodder in the rains.

Nyctanthes Arbor-tristis. *Square-stalked Nyctanthes.*

Vern.—*Sanskrit, Saphalikā; Bengali, Siuli; Hindi, Harsinghar, Dakhini, Pahar-bati; Tamil, Paghala-malli; Telugu, Poghadamullay.*

Perfume.

A small tree, found wild in the forests of Central India and the Sub-

Himalayan regions, and also cultivated in many parts of India for its delightfully fragrant flowers, which are given as an offering to the gods, and of which a perfume is made. The tree is, however, valuable for the tubes of the corollas of its flowers, which yield a beautiful yellow dye. The flowers are simply dried and kept in this state till they are needed for dyeing purposes. They are then boiled, the orange dye being thus extracted from the flower-tubes. The cloth is dipped in the infusion and dried. The colour yielded is fleeting. The bark is used in tanning and as an astringent medicine. The leaves are considered febrifuge. The flowers are also used in medicine, and, according to Mr. Baden-Powell, are considered cool and light, used in ringworm and to reunite broken bones, and also in disorders of the wind, mucus, and bile. They contain an essential oil.

Dye.

Medicine.

Oil.

Nymphaea lotus. *Water-lily.*

Vern.—*Bengali*, Shaluk, Nál; *Hindi*, Nilofar; *Tamil*, Tella-kaluva.

The water-lily is found in tanks and marshes all over India. There are two varieties, one with white and the other with red flowers. The roots are collected in the dry season and are made into curries and other dishes. The seeds are also edible. In medicine the flowers are prescribed as a dry and cold astringent remedy in diarrhoea, cholera, fever, and disorders of the liver; root considered mucilaginous and demulcent, given in piles; seeds regarded as a cooling remedy administered in cutaneous affections and leprosy, and as an antidote for poisons.

Food.

Medicine.

O

Ochres.

Six kinds of ochres are ordinarily sold in the market, of which two are red, viz., Geru and Hirmji; three yellow, viz., Multáni, Ramraj, and Piuri; and one of chocolate colour. Ochres generally are an earthy mixture of alumina, silica, oxide of iron and other substances, and are found in many parts of India. Geru is a hard, red, laminated earth, used in dyeing as well as in medicine. Hirmji has a fine, deep chocolate-red colour, used for painting houses, in dyeing and calico-printing. All the houses of the Jaipur town are washed with it. Multáni earth is a soft, saponine, drab-coloured earth, used largely in dyeing and calico-printing, as also in medicine and for washing the hair. It is found in the sandy and rocky tracts of country lying to the south and west of Multán, hence its name "Multáni." Ramraj is found in Bundelkhand, and has lately been found useful for painting wood. Piuri is much used in painting; it is of two kinds, one of mineral origin is imported and the other manufactured from cow urine. Chocolate-coloured earth is found in Jabalpur; it has lately come

Dye.

to notice, and already a trade has sprung up in it. The other ochres mentioned by Mr. Baden-Powell as found in the markets of the Punjab are Gil-irmani, Gil-i-khardya, Gil-i-abroshi, and Gil-i-makhtum. Black earth is also found in many parts of the country and is used in calico-printing.

Ocymum Basilicum. *Common Basil.*

Vern.—*Bengali*, Hindi, Babui tulsi; *Dakhini*, Salzat; *Tamil*, Tirunitrup-pattiri; *Telugu*, Vibudi-patri.

Medicine.

A small shrub, found almost in all parts of India. The seeds steeped in water are deemed cooling and mucilaginous, and are given in catarrh, dysentery, diarrhoea and special diseases, and are also considered useful in fevers.

Ocymum sanctum, the Holy Basil, is one of the sacred plants of the Hindus, being dedicated to Vishnu, the Preserver of the World. The dried plant is used in medicine, and is considered a hot, pungent remedy, useful in fever, catarrh, affections of the liver, and leprosy. The leaves have an aromatic smell and possess stomachic properties; seeds mucilaginous. The wood is used to make beads.

Ocymum pilosum. (*Artemisia vulgaris*?)

Paper stock.

A paper material has been sent by Mr. Bowstend of Haripur Factory, in the Bhágalpur district of Bengal, under the vernacular name of *Marua*. Mr. Bowstend gives the following description of the article, and is anxious that a fair trial may be given of his sample:—

“*Artemisia vulgaris*, *Ocymum pilosum*.—It grows all over Behar in the rainy weather, yields a seed-grain of a dark-brown colour, which the poor native labourers make into flour and bake into cakes for food. Each plant has three or four stems averaging about two feet in length, to each of which the fibre-bearing leaves adhere. These, after the plant is sufficiently retted, are pulled off by the hand, washed and dried. If ravelling, the stuff is of no consequence, then it may be beaten on the ground with sticks to separate, from the parchment-like tissue, the fibre threads; but should uniform straightness be necessary, this last process must be avoided and machinery of some sort adopted for the purpose. It makes a very good strong twine also, fit for the common purposes of house-thatching, for tying, and would probably sell for such at Rs. 5 per maund. The jute twine ordinarily sells for Rs. 6 or 7.”

The manager of the Bally Paper Mills has spoken of it as a “good coloured straw or grass; seems good material and worthy of a trial.”

The sample having been sent to Amsterdam, it was not found possible to correctly identify the plant.

Odina Wodier.

Vern.—*Bengali*, Jiyál; *Hindi*, Kiamil; *Tamil*, Wodiër; *Telugu*, Gumpini; *Burmese*, Nabhu.

Fibre.
Gum.

A moderate-sized deciduous tree, found in the forests of India and Burma, and used as a hedge plant in Bengal. The inner bark is used as a coarse fibre in Burma. A brown, clear, brittle gum is obtained from the

tree, which is used in calico-printing and in native medicine. The wood Timber. is used for spear-shafts, scabbards, wheel-spokes, oil-presses, &c. Dr. Medicin Bidie states that a lotion of the decoction of the bark is used as a remedy for skin diseases and as an astringent gargle. The bark is also used for Tan. tanning leather.

Oil (fish).

Fish oil is brought to Calcutta from East Bengal. It is chiefly used in curing leather.

Oil seeds. See "Classified List."

Oldenlandia biflora. Two-flowered Indian Madder.

Vern.—Bengali, Khetpáprá.

This plant is common in the rice-fields of Bengal. A decoction made Medicin of it along with *Tinospora cordifolia*, coriander seeds, and the leaves of *Trichosanthes dioica*, is considered a valuable remedy for low fevers.

Oldenlandia umbellata. See *Hedyotis umbellata*.

Olea cuspidata.

Vern.—Hindi, Kau.

A moderate-sized deciduous tree, found in the North-West Himalayas. Timber. The wood is valuable; it polishes well, and, according to Mr. Gamble, may Fruit. be tried as a substitute for boxwood in inlaying work. The fruit is edible, and an oil has been extracted from it in small quantity, but of good Oil. quality.

Onosma echioides.

Vern.—Bengali, Hindi, Ratanjút, Gauzaban.

This plant is plentiful in the Kangra Himalayas. The root is used as a colouring matter, being substituted for the alkanet (*Anchusa tinctoria*), Dye. or giving a red tint to liquids, particularly Rowland's Macassar oil. In Medicin medicine the root is applied externally to eruptions, the leaves used as an alterative, and the flowers as a cardiac and stimulant in rheumatism and palpitation of the heart. Mr. Atkinson states that under the name of Ratanjút, the roots of *Potentilla nepalensis*, Hook *Jatropha Curcas*, and other plants are also collected and sold.

Ophelia Chirayta. Chiretta.

Syn.—Agathotes Chirayta.

Vern.—Sanskrit, Chiraitaka; Bengali, Hindi, Chiretá; Tamil, Shayrait; Telugu, Ilasattu.

An annual found in the southern slopes of the Himalayas. The whole

Medicine.

plant is intensely bitter, and is held in high estimation by European practitioners in India for its tonic and febrifugal properties, being especially efficacious in cases of irregular liver. The following remarks on the efficacy of *Chiretta* as a tonic medicine is quoted by Major Drury in his "Useful Plants" :—

"*Chiretta* possesses the general properties of bitter tonics, but has at the same time some peculiar to itself, which fit it well for certain forms and complications of disease. Unlike most other tonics, it does not constipate the bowels, but tends to produce a regular action of the alimentary canal, even in those subject to habitual constipation. During its use the bile becomes more abundant and healthy in character. The tendency to excess of acidity in the stomach, with disengagement of flatus, is much restrained by its use. These qualities fit it in a most peculiar degree for the kind of indigestion which occurs in gouty persons. It may, when necessary, be associated with alkaline preparations or with acids; the latter are generally preferable. The same remark applies to its employment in the treatment of scrofula. As a remedy against the languor and debility which affect many persons in summer and autumn, nothing is equal to the cold infusion of this plant. It may be taken twice or even more frequently daily, for a considerable time; then discontinued, and afterwards resumed. Children take it more readily than most other bitters. It is found to be a very efficacious remedy in India against intermittents, particularly when associated with *Guilandina Bonduc* or Caranga nuts. The debility which is apt to end in dropsy is often speedily removed by infusion of *chiretta*, to which is added the tincture formed of it with orange peel and cardamoms. Its efficacy in worm-cases has procured for it the name of worm-seed plant. The extract is given with great benefit in some forms of diarrhoea and dysentery, particularly if combined with *Ipecacuanha*, the emetic tendency of which it very markedly controls."

Chiretta is also obtained from many other species of the same genus. About six tons of *chiretta* are exported every year from the Kumaun forests. Large quantities of *chiretta* are annually sent to Europe, where it is used chiefly to make bitter waters.

Opismenus frumentaceus.

Syn.—*Panicum frumentaceus*.

Vern.—Bengali, Shámá; Hindi, Sánwá; Dakhini, Katu, letugu, Bonká shámá.

Food.

A wholesome and nourishing millet, used as food by the poorer classes. It is extensively cultivated in the Rohilkhand Division of the North-Western Provinces. In South India it yields two crops in the year. It is not cultivated in Bengal, but the grass is found wild in rice-fields and lowlands, and used as a green fodder in the rainy season.

Opuntia Dillenii. Prickly Pear.

Vern.—Bengali, Pheni-mansa; Dakhini, Chappel send; Tamil, Nagadali.

Fibre.

The prickly pear is largely found in Rajputana and in the Madras Presidency. Large areas of land in Madras have been rendered unfit for cultivation by being covered with this plant. A coarse fibre is obtained from it, which is suitable for the manufacture of paper. In many places the cochineal

insect is found on the prickly pear, but no attempt has been made to cultivate it systematically, although it is believed that the industry has much chance of success in India.

Orchis mascula, Eulophia vera, &c.

• **Vern.**—Salep-misri.

The tubers known in the market as *salep-misri* are believed to be the produce of several terrestrial orchids, of which *O. mascula* probably yields the largest supply, and *E. vera* is the source of the Indian produce. It is generally brought to India from Afghanistan and Kashmir. It is considered a powerful aphrodisiac and is taken boiled with milk. Mr. Murray, in his "Plants and Drugs of Sind," has given the following account of Salep-misri:—

Medic

"The nutritious substance called salep is prepared from the subterraneous succulent roots of *Orchis mascula* and many others of the ophreous division, and in India from the species under notice (*E. vera*). It consists almost entirely of a chemical principle called 'Bassorin.' *E. campestris*, *E. herbacea*, and *E. vera* (Royle) are species found in India. Dr. Stewart says the first is found in Oudh and Rohilkhand, and in the Sewaliks of the Gangetic Doab, and he believes he found it in lowlands by the Ravi close to Lahore, the second in Southern India and the outer Himalayas. The best kind of salep are said to come from Afghanistan and Kashmir. By the natives salep is chiefly esteemed as a tonic aphrodisiac. It is said by Royle to be a nutritious unirritant diet for the sick, convalescent, or children, boiled with water or milk, and flavoured just as a sago and other farinaceous food."

Oroxylon indicum.

A fodder grass sent from Saharanpur.

Fodder

Oryza sativa. Rice.

Vern.—Bengali, Hindi, Dhán, Cháwal; Tamil, Nelli, Arisi; Telugu, Bium, Vudlu; Burmese, Sôô

Rice is the most important of the Indian crops, and is the staple food of the natives of Bengal, Assam, Burma, and parts of Madras and Bombay. There are upwards of three hundred well-marked varieties of rice, of which many of the best known kinds have been supplied by Babu Mahendra Nath Bhattacharjya, M.A., B.L., of Bogra. The two principal divisions known in cultivation are autumn and winter rice. These are again subdivided into rice sown broad-cast and rice transplanted. The varieties are distinguished according to the quality of the husked rice, the long, fine, white, fragrant kinds being deemed superior. The produce of uplands is generally superior to lowland rice. The Patna and Pilibhit table-rice holds the first place. Rice is eaten boiled, and also made into flour and cakes. It is also eaten parched and made into confection. It is not a nourishing food, containing only 9 per cent. of nitrogenous ingredients, and 89 per cent.

Medicine.
Fodder.

of non-nitrogenous ingredients. In medicine it is used for poultices, and various preparations of it as sick diet. Rice straw is a valuable fodder; it is used for thatching houses, and is suitable for the manufacture of paper. The quantity of rice (husked) exported from India during the five years ending 1880-81 is as follows:—

		Quantity Cwt.	Value. £
1876-77	. . . . .	19,546,741	5,742,539 .
1877-78	. . . . .	18,211,388	6,889,361
1878-79	. . . . .	20,621,712	8,810,121
1879-80	. . . . .	21,008,045	8,341,685
1880-81	. . . . .	16,769,344	8,971,666

See also Food-crops

Ougeinia dalbergioides.

Vern.—Hindi, Sandan; Dakhni, Kálá palas; Telugu, Dargu.

Gum.

A moderate-sized tree, found in the Sub-Himalayan tract, Central India, and the Western Coast. It produces an astringent red gum, the branches and leaves are used as a fodder; the bark for intoxicating fish.

Timber.

The wood is hard and durable, and takes a good polish

Oxalis corniculata. Indian Sorrel.

Vern.—Bengali, Amúñ; Hindi, Ambuti; Tamil, Pahiakur; Telugu, Pallachintu.

Medicine.

A common weed, found in moist places. It has the same properties as the European sorrel; contains salts of oxalic acid, and is used as a refrigerent in fever and as an antiscorbutic; and also externally to remove corns, proud flesh, and fibres over the cornea.

P

Pachyrhizus angulatus.

Vern.—Bengali, Sank-álu.

Fruit.

Cultivated in Bengal for its root, which resembles conch shell in appearance. It is eaten raw and is juicy and sweet in taste. A preserve of it has been received from Birbhum under the name of Batat; s species (No. 1001).

Palae grass. (Unidentified.)

Fodder.

A fodder grass sent from Saharanpur, in the North-Western Provinces.

Panicum frumentaceus. See Oplismenus frumentaceus.

Panicum italicum. See Setaria italica.

Panicum jumentorum. *Guinea-grass.*

The guinea-grass has now been thoroughly acclimatised in India, and may be regarded as a valuable addition to the fodder resources of the country. Fodder.

Panicum miliaceum. *Little Millet.*

Vern.—Hindi, Chiná; Dakhini, Wári, Shamakh; Tamil, Varagu; Telugu, Worgá.

Cultivated as a dry crop in many parts of India. It is imported into England from South Europe for feeding cage birds. There are two well-known varieties, one brown and the other yellow-coloured. Dr. Bidie, however, mentions four kinds known in South India, viz., (1) common, (2) Gru, (3) Chada-gru, and (4) Kadakani. The seeds, when husked, are white and smooth like sago, and considered a good diet for invalids. The grain contains about 9 per cent. of nitrogenous matter and 59 of starch. In North India the crop takes only three weeks to ripen, and it is therefore a food permitted for Hindus on fast-days. Food.

Panicum miliare. *Millet.*

Vern.—Bengali, Hindi, Kangu; Tamil, Sawmay.

This millet is not easily distinguishable from *Setaria italica*, and the samples of both are often confused with each other. Dr. Bidie states that in South India it is "pretty generally used as an article of food." Dr. Balfour describes the seeds as "oval, slightly compressed, brilliant, about a line in length; bark or envelope blackish, brown or fair; parenchyme, white or sweet taste. In the Peninsula of India, it is generally cultivated on an elevated rich soil. The seed is one of the sorts of dry or small grain which forms an article of diet of the Hindus who inhabit the higher lands, and cattle are fond of the straw." Food.

Panicum psilopodium.

Cultivated in some parts of the North-Western Provinces as a food-crop. Four varieties are known: Mijhri, Phikar, Rali, and Basi; used as food by the poorer classes. Food.

Panicum uliginosum.

A variety of *P. miliaceum*. The stalks are used as a fodder, a sample of which has been sent from Saharanpur. Fodder.

Panyal seeds.

An oil-seed sent from Noakhali, a district of Eastern Bengal. Probably the seeds of *Flacourtia Cataphracta*. See *Flacourtia Cataphracta*. Oil-seed.

Papaver somniferum. *Poppy; Opium.*

Vern.—Bengali Hindi, Post, Afim; Dakhini, Khash-jhash-ka-post; Tam, Gasagasa-tol; Telugu, Gasa-gasa-tolu.

The poppy plant is extensively cultivated in Northern and Central

Intoxicant.

Medicine.

Oil.

Spice, Food.

India for the concrete inspissated juice, known as opium, obtained by making incisions on the capsules. Opium is a Government monopoly, and its cultivation is carried on on a system of advance received by the cultivators from the State, to which they make over the whole of the produce. Opium produced in Northern India is known as the Bengal opium, while the produce of Central India is known in commerce as the Malwa opium; the latter is of an inferior quality. Good opium contains about 4 per cent. of morphia and 3 per cent. of narcotine. Opium is generally used as an intoxicant in the form of pills, or smoked in a prepared form known as the *madak* and *chandu*. Europeans generally have an aversion to opium-eaters, as it is said to stupify the persons using it. But such results can only be seen when used in excess, and it must be admitted that excess in opium is less injurious than excess in spirituous drink. On the other hand, moderate use of opium after the age of 40 prevents waste of tissue, prolongs life, and makes the system less amenable to the influences of malarial and other poisons which vitiate the atmosphere of tropical countries. Opium is chiefly exported to China, and yields an annual revenue of about 9 millions sterling pounds, or more than a seventh part of the revenue of India. In medicine, opium is a valuable narcotic and anodyne, and is used in various diseases. The poppy-heads are used as a narcotic in coughs, and a decoction of it for fomentation in pains, sprains, &c. The seeds are also used similarly. A valuable oil is obtained by expression from the seeds, which is used for culinary purposes, and as a demulcent in medicine. Poppy seeds are also used as a condiment and as food. Opium trash is a good manure.

Most of the samples of opium and its preparation sent to Amsterdam have been supplied by Mr. H. Rivett-Carnac, Opium Agent, Benares. Besides the ordinary opiums for sale in the country and for export to China, the samples consisted of—

- | | |
|--------------------------------|-------------------------------|
| (1) Uncleaned trash. | (8) Acetate of morphia. |
| (2) Cleaned trash for packing. | (9) Hydrochlorate of morphia. |
| (3) " " caking. | (10) Narcotine. |
| (4) Leaf for shell. | (11) Codeia. |
| (5) Provision opium. | (12) Poppy seeds. |
| (6) " " cake. | (13) " oil. |
| (7) Abkari opium. | |

The quantity of opium exported during the five years ending 1880-81 was as follows:—

	Quantity. Cwts.	Value. £
1876-77	130,775	12,404,748
1877-78	126,789	12,374,355
1878-79	125,765	12,993,978
1879-80	144,638	14,323,314
1880-81	127,484	16,600,147

Paper and Paper materials.

India is very rich in paper materials, but little has been done to utilise them. Innumerable kinds of grasses, barks, leaves, and coarse fibres annually rot in the jungles and villages which could be converted to wealth if properly used. Very little of European capital has been directed to paper manufacture, and the result is that, while India has sufficient resources to supply half the world with paper, she herself imports £400,000 worth of it every year. There is, however, much room for the expansion of the trade in paper stock, but the greatest obstacle in this direction is the heavy cost of transport, owing to the space occupied by these articles in railway carriages and ships. This difficulty can be surmounted if manufacturers of paper in Europe can be induced to take half-state pulp from India. With this view, samples of different kinds of paper stock have been sent to Amsterdam.

Native paper is still manufactured in many places, and is capable of competing with European manufactures for its durability. Samples have been received from Jaipur in Rajputana and Hughli in Bengal. The new native paper-mill of Lucknow has supplied the half-state pulps mentioned above, and also of paper manufactured in it. See *Bambusa arundinacea*, *Daphne papyracea*, *Dhadka* grass, *Kaing* grass, *Ocimum pilosum*, and *Saccharum Munja*.

Pari leaves. (Cissampelos Pareira.)

The pari leaves, sample of which has been sent from Kumaun, are said to possess the virtue of congealing water. They are used as a diuretic in special diseases, and are applied to abscesses to hasten suppuration. The roots of the plant also possess diuretic, tonic, and aperient properties. Medicine

Paritium tiliaceum. See *Hibiscus tiliaceus*.

Paspalum scrobiculatum. Punctured Paspalum.

Vern.—Bengali, Hindi, Kodo; Telugu, Kira-ruga.

A grass, cultivated for its seeds, used as food by the poorer classes. Food. It grows on poor soils and does not require much care. The grain is said to be injurious to health, producing cholera and vomiting; but there is much doubt as to the accuracy of this statement, as in many parts of the country it is a favourite article of food.

Pavonia odorata.

Vern.—Tamil, Perampiti-pu; Telugu, Eira-kati.

Cultivated in gardens for its fragrant flowers. A fibre obtained from this plant has been sent by the Madras Forest Department. Fibre.

Pavonia zeylanica.

Vern.—*Tamil*, Sittamuti.

Fibre.

A fibre obtained from this plant has been sent by the Madras Forest Department.

Peacock feathers.

There is a large trade in this article. The feathers are brought from the North-Western Provinces, chiefly from the Etah district. But the fowl is now getting scarce. Native chiefs do not allow it to be shot in their States.

PedaliuM Murex. Prickly-fruited PedaliuM.

Vern.—*Bengali*, *Hindi*, Bara-gokhuru; *Dakhini*, Hāti goghuru; *Tamil*, Arainerunji; *Telugu*, Enuga-palleru-mullu.

Medicine.

A succulent plant, found in the rains on waste lands of Northern India and the sea-shore of Madras. The plant and the seeds render water mucilaginous if steeped in it. They are used in medicines as a demulcent and diuretic, prescribed largely in diseases of the urinary organs. In famine times the seeds have been used as food.

Food.

Penicillaria spicata. Spiked Millet.

Vern.—*Hindi*, Bājra; *Tamil*, Kambu; *Telugu*, Gantelu Sajjala.

Food.

Cultivated almost in all parts of India, except Eastern Bengal. This millet is extensively used as food by the poorer classes in Behar, North-Western Provinces, and Punjab, and the stalks form an excellent fodder for cattle. Bajra millet is reckoned heating, and is therefore much consumed in the cold season: in 100 parts it contains 13.92 parts of nitrogenous ingredients, 82.07 of non-nitrogenous ingredients, and 0.73 of inorganic ingredients. It is sown on poor soils as a rain-crop, and ripens later than *Sorghum vulgare*.

Pesagoo bark. (Unidentified.)

Dye.

A dye-stuff sent by the Madras Forest Department.

Phakram. (Unidentified.)

Fibre.

A fibre used for making cloth by the Garos, a hill tribe of Assam.

Pharbitis Nil.

Vern.—*Bengali*, Nil-kalmi; *Hindi*, Kāldānā; *Tamil*, Kodi-kakkatunvirai; *Telugu*, Jiriki-vittulu.

Medicine.

The plant grows throughout India; the seeds are used in medicine and reckoned a safe and effectual cathartic, administered in constipation, dropsy, intestinal worms, and diseases of the brain. Dr. Bidie states that their use

was probably not known to the Hindus in ancient times, and that about the year 1861, while he was engaged in the investigation of native drugs, he discovered a resin in the seeds which he called "Pharbitisin," and which proved to be the active principle of the drug.

Phaseolus aconitifolius. *Aconite-leaved Kidney Bean.*

Vern.—Hindi, *Mōh*; Tamil, *Tulka-pire*; Telugu, *Kunkum-pesalu*.

A small pulse, much cultivated as a rain-crop in the Northern Provinces of India. Its leaves are much indented like those of *aconite*, hence its name "*aconitifolius*." It is split, cooked like other pulses, and eaten along with bread or rice. Its chemical composition is stated to be 23·80 per cent. of nitrogenous ingredients, 60·78 of carbonaceous or starchy ingredients, and 0·64 of fatty or oily matter. The beans, the seeds, and the straw are a nourishing cattle fodder. Food.

Phaseolus calcaratus, variety **torosus**.

Vern.—Hindi, *Gurānsh*.

This grain is cultivated in the Himalayas at a higher elevation than any other pulse. There are two varieties, one with a red and the other a cream-coloured seed. Food.

Phaseolus Mungo. *Green Gram.*

Vern.—Bengali, *Hāli mung*; Hindi, *Hari mung*.

Extensively cultivated in Bengal and North-Western Provinces. The grain is eaten cooked like other pulses. Food.

Phaseolus Mungo, variety **aureus**.

Vern.—Bengali, *Sonā mung*.

The seeds are yellow, hence the name "*aureus*;" in vernacular it is also called the golden mung. It is considered the best of all the pulses, and is first parched before splitting. Food.

Phaseolus Mungo, variety **Max**.

Vern.—Hindi, *Urd*, *Māsh*.

This variety is extensively cultivated in Northern India, and is largely eaten by all classes of the people. It is also given to working cattle as a nourishing food. Food.

Phaseolus Mungo, variety **radiatus**.

Vern.—Bengali, *Mashkalāi*.

This pulse is closely allied to the above, and is largely cultivated in Northern Bengal. It is universally liked as food, eaten along with rice in Food.

the same manner as all pulses are eaten, *viz.*, by first splitting it and then by boiling it with a little turmeric, red pepper, and other condiments. *Thikra-kalai* (Tamil, Karupu-du-lunthu), a sub-variety, is extensively cultivated in South India.

Fodder.

There are numerous other varieties and sub-varieties of *Phaseolus Mungo*, samples of most of which have been sent to Amsterdam under their native names, or distinguished as large or small, or according to the colour of the seeds. The straw of all the *Phaseolus* species is a good cattle fodder.

Phoenix dactylifera. See *Phoenix sylvestris*.

Phoenix paludosa. See *Golpátá*.

Phoenix sylvestris. *Wild Date Palm.*

Vern.—Bengali, Hindi, Khejur; Dakhini, Sendi; Tamil, Itsham-pen; Telugu, Itachettu.

Saccharine.

This species of date palm is cultivated largely in Bengal for its juice, which is obtained by notching the head of the tree. Date sugar is obtained by boiling down the juice and causing the moisture to evaporate. The chief seat of date sugar manufacture is the presidency districts of 24-Parganas, Nadiya, and Jessor. An intoxicating toddy is also made by causing the juice to ferment, which is largely consumed by the poorer classes in Bengal and Behar. The fruit of *P. sylvestris* has a larger stone and less of that sweet pulp which makes *P. dactylifera* such a valuable article of food in Arabia and Egypt. It, however, forms the staple food in some of the desert districts of the Punjab, and is known by different names, according to the method by which it is preserved, split, dried, boiled in oil, &c. The fruits of *P. dactylifera* are imported from the Persian Gulf, of which three kinds are sold in the market,—(1) dried, called Chohará, used in medicine as a general tonic and a nourishing food; (2) Ghará-khejur, the best kind of date, very sweet and considered a good diet for consumptive persons; and (3) the glutinous mass called the Pindi-khejur, a cheap article. The farinaceous substance found in the head of *P. sylvestris* is edible, and is given as a delicate food to invalids. The leaves are woven into mats and baskets. The fibrous petioles of the leaves are suitable for the manufacture of paper and cordage. The kernels of the fruit are used in medicine to relieve thirst. A gum called *hukmchil* is obtained from the palm.

Fruit.

Fibre.

Medicine.

Gum.

Photographs.

Ten views illustrating the tea industry in its different phases have been purchased from Messrs. Bourne and Shepherd, photographers, of Calcutta. Babu P. L. Mitra, a native photographer of Calcutta, has sent a likeness of a Brahman and the S. S. *Pekin*.

Phuljhuri. (Unidentified.)

A grass found in the rice-fields and marshes of Lower Bengal; used as Fodder. a green fodder in the rainy season.

Phulkaris. See Textile fabrics.

Phyllanthus Emblica. See *Emblica officinalis*.

Physalis somnifera. See *Withiana somnifera*.

Pinus excelsa.

Vern.—*Punjabi*, Chir; *Hindi*, Raisalla, Kail.

A large tree, found in the Himalayas. The wood is more durable than *P. longifolia*, and is used for house-building, shingles, water-channels, and agricultural implements. It is very resinous and contains turpentine, but is not usually extracted. The tar produced by this tree is said to be equal to the best Swedish, and is used for protecting wood-work.

Pinus longifolia. *Long-leaved Pine.*

Vern.—*Bengali*, Gandhbiroza; *Hindi*, Chir.

A large tree, found in Afghanistan and the outer North-Western Himalayas. The tree yields large quantities of resin called *gandhbiroza*. Dr. Brandis states:—

“The yield of an ordinary tree is 10 to 20 lbs. of resin the first, and about one-third the quantity the second, year, after which the tree either dies or is blown down.”

Mr. Atkinson says:—

“The long-leaved pine is the principal source of the oleo-resin known as *birja* in Gurlhwal and *lisha* or *lassa* in Kali-Kumaun, and of the oil called *birja-ka-tel* or *tarpin-ka-tel*. There are two kinds of resin,—(1) the *birja* or *berja* sort, which comprises the tears exuding naturally from the bark; and (2) the *bakhar-birja*, or resin produced by making long and deep incisions in the sap-wood. The latter is chiefly used by bangle-makers.”

Tar is extracted from the resin, and turpentine oil is distilled from the tar. The resin *gandhbiroza* and the tar are used in medicine as a stimulant diuretic in diseases of the urinary organs, chronic bronchitis, hæmorrhages, and also in rheumatism and fevers. The bark, which is of great thickness, is used in tanning; the charcoal of the leaves, mixed with rice-water, is used as ink. The wood is largely used for building purposes in the Simla and Naini Tal hill sanitarium, but is not durable. The fruit, called *syuta*, is edible.

Piper album. See *Piper nigrum*.

Piper Chaba.

Vern.—*Bengali*, Chai; *Hindi*, Cháb.

Sample supplied by Dr. K. L. Dey; is used in native medicine as a stimulant, antiscorbutic, and carminative.

Piper longum. See *Chavica Roxburghii*.

Piper nigrum. *Black Pepper.*

Vern.—*Bengali, Hindi, Kala-marich; Dakkini, Choka; Tamil, Milagu; Telugu, Miriyalu.*

This climbing plant is extensively cultivated in South India, and is also found wild among the hills. The cultivation of pepper-vine does not require great care. The cuttings or suckers are usually planted at the base of trees having a rough bark, e.g., the arca nut, jack, mango, &c., and the plants trained on them. In three years the vine begins to bear; the berries are plucked green and dried in the sun on mats, when they turn black. The chief use of black pepper is as a condiment. In medicine it is reckoned carminative and febrifuge, and a rubefacient in external application. In Hindu medical books, black pepper is described as "acid, pungent, hot, dry, carminative, useful in intermittent fever, hæmorrhoids, and dyspepsia."

The white pepper sent under the name of *P. album* is not a distinct article, but merely the unhusked fruits of *P. nigrum*. The husk is easily removed by soaking the ripe berries in water for a short time.

Pisonia aculeata. *Prickly Pisonia.*

Syn.—*P. villosa.*

Vern.—*Bengali, Bagh-anchra, Telugu, Embuddi-chettu.*

A large straggling climber of Bengal, Southern India, and the coast forests of Burma and the Andaman Islands. It makes impenetrable hedges. The bark and the leaves are used as an irritant for application on swelling of the limbs and rheumatic pains.

Pistacia integerrima.

Vern.—*Panjabi, Kaka; Hindi, Kakrasingi.*

A deciduous tree of the North-West Himalayas. Wood used for furniture and ornamental work; leaves given as fodder for cattle. The gall-like excrescences formed by insects on the leaves and petioles of this tree (which were formerly supposed to be the produce of *Rhus Kakrasinghee* or *Rhus succedanea*) are largely exported from the hills, and used in medicine as a tonic and expectorant, as well as in disorders of the digestive organs. They are also said to be used in dyeing.

Pistacia lentiscus.

Vern.—*Hindi, Rumi-mastaki.*

A yellow transparent gum-resin obtained from this tree is brought from Central Asia and used in medicine for disorders of the digestive organs, and as a local application for toothache.

Spice.

Medicine.

Medicine.

Timber.

Medicine.

Dye.

Gum.

Medicine.

Pistacia Terebinthus.

Vern.—*Persian*, Hub-ul-khizra.

The small, dried, brown fruits of this tree brought from Central Asia are chiefly used in medicine as an astringent in special diseases, and Medicine. for palpitation of the heart. The tree also supplies a kind of gall.

Pistacia vera. Pistachio Nut.

Vern.—*Bengali*, Hindi, Pistā.

Pistachio nuts are brought to India by the Kabul traders. They smell very much of assafoetida, being brought along with that substance. The nuts are considered very nourishing and are eaten raw, parched, or made into confection. In medicine, pistachio is considered a warm, moist remedy, Fruit. used in general debility. An oil is extracted from the kernels, which acts as a demulcent and restorative. The bark is employed as a tonic in Oil. indigestion. Dr. Ballfour states that the galls found on the tree, known as Medicine. *Gul-i-pista*, *Bazghanj*, or *Bozaganj*, are used as a dye for silk, and as an Dye. astringent in medicine.

Pistia Stratiotes.

Vern.—*Bengali*, Toka-púnā, *Dak'ini*, Anter-ghuaga, *Tamil*, Agava-tamare; *Telugu*, Antara-tamara.

An aquatic stemless plant which grows in old tanks on the sea-coasts. An infusion of the plant is given in small-pox; it is considered a cooling Medicine. medicine.

Pisum arvense. Field Pea.

Vern.—*Bengali*, Payra matar; *Hindi*, Matar.

Cultivated all over India as a winter crop for its seeds, which are eaten either parched or split, and cooked like other pulses. In Bengal, two principal varieties are known, one with brown seeds and the other white. The Food. dried plant is a good fodder.

Pisum sativum. Common Pea.

Vern.—*Bengali*, Hindi, Matar; *Dak'ini*, Watana, *Tamil*, Pattani; *Telugu*, Gundu-sani-gilu.

Cultivated all over India. The green pea is used as a vegetable. The ripe seeds are eaten either parched whole or parched and ground into flour, and also split and cooked like other pulses. It is extensively cultivated in Northern India along with barley, and the mixed grain *bejhra* is the staple food of the poorer classes. The chemical composition of the pea is given as follows: nitrogenous ingredients, 26.52 per cent.; non-nitrogenous ingredients, 70.38; inorganic ingredients, 3.10. The plant is a good Food. fodder. There are several varieties, the white *Kabuli* and brown seeds being the most distinguished.

Plantago ispaghuta. *Spogel Seeds.*Vern.—Bengali *Hindi*, Isabgul.

Medicine.

A native of Persia. The seeds are emollient, demulcent, and diuretic, largely prescribed in dysentery and piles. The seeds swell in water, forming a demulcent mucilage.

Plumbago zeylanica. *Plumbago.*Vern.—Bengali, *Hindi*, Chitá; *Dakhini*, Chitar; *Tamil*, Chittira; *Telugu*, Chitra; *Burmese*, Ken-kyok-phyu.

Medicine.

The plumbago plant is common in Bengal, South India, and Kumaun hills. In Bengal it is used as a hedge plant. There are three varieties known in this country,—the white, red, and the blue; the last, Dr. Balfour states, has been brought from the Cape. The root is used in medicine as a powerful irritant, and contains a neutral crystalline, called Plumbagine. It is ground, made into a paste by mixing with flour and applied as a blister on pains, &c. Taken internally it is employed to cure skin diseases and to promote digestion. It is also employed to cause abortion by applying it locally to the uterus, and also taken internally by mouth, but Dr. Bidie states its application frequently induces fatal uterine inflammation. It is considered a remedy for secondary syphilis and leprosy, but great caution is necessary in its use.

Plumbi carbonas.

Vern.—Bengali, Safeda.

Medicine.

Sample supplied by Dr. K. L. Dey, who has given the following account of the substance in his "Indigenous Drugs of India":—

"This is an impure carbonate of lead, and is a very cheap and common article of the Indian markets. It is used in medicine in the form of an ointment, but largely consumed as a basis of paint. (Price 5d. per lb.)"

Plumbi oxidum.

Vern.—Bengali, Mudrá sankha.

Medicine.

Sample supplied by Dr. K. L. Dey, from whose "Indigenous Drugs of India" the following description of the substance is quoted:—

"The Mudra-sankha is a semi-vitrified oxide of lead, and is, like the former, used in all kinds of sores as an ointment. It is also given internally as a tonic in $\frac{1}{2}$ to $\frac{1}{4}$ grain doses, and enjoys a good reputation for its efficacy among native physicians. It is also used as an ingredient for hair-dye. (Price 7d. per lb.)"

Plumbi oxidum (rubrum). *Minium; Red-lead.*Vern.—Bengali, Mete-sindur; *Tamil*, Chenduram; *Telugu*, Chenduramu.

Medicine.

It is mostly used in arts. In eruptive skin diseases it is employed in

the form of ointment or liniment. Red oxide of lead was manufactured by the Hindus in ancient times.

Pogostemon Patchouli. *Patchouli.*

Vern.—Bengali, Puchápát.

A labiate plant, found in Eastern Bengal, Burma, and the Malay Peninsula. It is largely used as a scent for smoking-tobacco and hair oil, and is also imported to Europe for perfumery purposes. Dr. Balfour makes the following remarks on its use:—

Perfume.

“The odour of the dried plant is strong and peculiar, and to some persons not agreeable; the dried tops imported into England are a foot or more in length. In Europe this is principally used for perfumery purposes, it being a favourite with the French, who import it largely from Bourbon. They were led to use it because, a few years ago, real Indian shawls bore an extravagant price, and purchasers distinguished them by the odour of Patchouli, with which they were perfumed, and on discovering the secret, the French manufacturers got into the way of importing the plant to perfume articles of their own make, and thus palm off home-spun shawls for real Indian. The Arabs use and import it more than any other nation. Their annual pilgrim ships take up an immense quantity of the leaf; they use it principally for stuffing mattresses and pillows, and assert that it is very efficacious in preventing contagion and prolonging life. The characteristic smell of Chinese and Indian ink is owing to an admixture of this plant in its manufacture. Some people put the dry leaves in a muslin bag, and thus use it as it is done with lavender for scenting drawers in which linen is kept; and this is the best way to use it, as this odour-like musk is most agreeable when diluted.”

An essential oil is obtained from the plant, which is used as a perfume. In medicine it is used to perfume oils.

Medicine.

Polanisia icosandra. *Wild Mustard.* (*Reduced to Cleome viscosa.*)

Vern.—Bengali, Hur-huriá; Dakhini, Jangli-Hulvut; Tamil, Nay-kadugho; Telugu, Kukha avalu.

A common weed, grows in Bengal and South India in the rainy season. In South India the fresh plants are used as a green and tastes like mustard. The juice of the fresh leaves are poured into the ear as a remedy for ear-ache, and the bruised leaves are applied to the skin as a counter-irritant; the seeds are carminative.

Medicine.

Polyalthia longifolia. *See Guatteria longifolia.*

Pongamia glabra.

Vern.—Bengali, Dakkaranja; Hindi, Karanj; Tamil, Ponga; Telugu, Kanga.

A moderate-sized tree, found in the Sub-Himalayan regions, Bengal, Burma, Central and South India. The seeds yield a thick brown oil used for burning, and as an application for cutaneous affections and rheumatism. The seeds are also used as a remedy for skin diseases.

Oil.

Medicine.

Porcelain.

Three dozens of tea-cups and saucers of an imitation porcelain have been obtained from Multán in the Punjab, and sent for use in the tea-room at Amsterdam. Porcelain tiles and flower vases of Multán are much admired and find a ready sale among Europeans. Until lately such articles were also made at Delhi, but owing to family dissensions the industry has collapsed.

Potassie nitras. (See also Saltpetre.)

Vern.—Bengali, Hindi, Sorá.

Sample sent by Dr. Kanny Lall Dey, who has given the following account of its medicinal use:—

"It is produced in great abundance in the soils of East Bengal, and available in Indian bázars at a very cheap price. It is one of the most important articles of the European Pharmacopœia.

"The nitrate of potash, or saltpetre, a very important article of commerce, is obtained as a natural product in various parts of the East, where it occurs as a thin, white efflorescence on the surface of the earth, and also artificially manufactured in some parts of the world. The British market receives its supply from India by the purification of the native nitre. In the district of Tirhut, in Bengal, it is produced most abundantly, as the nature of its soil, which contains a redundancy of carbonate of lime, is conducive to its development. In the month of November, the Konabs, or native manufacturers of saltpetre, commence their operations by scraping off the surface from old mud-heaps, mud buildings, waste grounds, &c., where the saltpetre has developed itself in a thin, white efflorescence, resembling frost-rind. This saline earth being collected at the factories, the operator first subjects it to the process of solution and filtration. This is effected by a large mud filter lined on the inside with stiff clay. As the earth thus treated contains nitrate of lime besides nitrate of potash, the solution is also made to pass through layers of wood-ashes (impure carbonate of potash), by which the former is transformed into nitrate of potash, carbonate of lime remaining as the result of reaction. The impure nitre thus obtained by crystallization is termed *dhonah*, and contains 45 to 70 per cent. of pure nitrate of potash. It is re-dissolved and crystallized by the native merchants who supply Calcutta bazars; and, when thus purified, is called by the natives *kalena*. It is further purified in Calcutta by re-solution and re-crystallization, and then laid out for sale. As the art of making gunpowder and fireworks has been familiar to the Hindus from the very ancient times, its manufacture and uses were evidently known to them. Its use in European medicine as a refrigerent, diuretic, and diaphoretic, is too well known to require further description. (Price 4d. per lb.)"

Potassie silicate.

Vern.—Bengali, Banslochan.

The substance found in the joints of female bamboo. See *Bambusa arundinacea*.

Prosopis spicigera.

Vern.—Bengali, Shami; Hindi, Chaunkra, Khejra; Dakkhini, Shemi; Tamil, Perumth; Telugu, Chani.

Timber.

A moderate-sized thorny tree, found in the dry zones of Northern and

Southern India. Wood hard, but not durable, used for building carts, well-curves, furniture, agricultural implements, &c. Pods used as a camel fodder, and the sweetish mealy substance inside, which tastes like carrots, is used as food, raw or cooked. The tree yields a gum somewhat resembling gum arabic. Food.
Gum.

Portulaca oleracea. *Small Purslain.*

Vern.—Hindi; Lunák.

Cultivated for its green leaves, which are cooked or eaten as a salad. Food. A drawing of the plant has been sent by Mr. Duthie, Superintendent of the Botanical Gardens at Saharanpur.

Prunus Amygdalus. *Almond.*

Syn.—Amygdalus communis.

Vern.—Sanskrit, Inghurdi; Persian, Bengali, Hindi, Badam; Tamil, Pársi vádám; Telugu, Pársi badam; Burmese, Badamsi.

The almond tree is a native of Western Asia, but has now become naturalised in the Mediterranean countries of Europe and Africa. It is cultivated in Afghanistan, Kashmir, and the Punjab, but in the plains of India the fruit does not ripen. The following description of the various uses to which almond is put is taken from Mr. Murray's "Plants and Drugs of Sind":— Fruit.

"In India it does not appear to be much used in native medical practice. The Arabians and Persians, according to Ainslie, place blanched almonds (sweet) amongst their aphrodisiacs, and bitter almonds as lithontriptic. The varieties are not distinguished from each other by any particular difference, save the taste of the kernels, and both are said to be sometimes obtained from the same tree. The best sweet almonds are those called Jordan almonds which are imported into England from Malaga. There are also other varieties, viz., Valentia, Italian, Portugal, and Oporto; the bitter almonds come chiefly from Mogadore. Both bitter and sweet varieties are imported into India from the Persian Gulf.

"Sweet almonds are of greater use in food than in medicine, but are reckoned to afford little nourishment; and, when eaten, are not easy of digestion, unless thoroughly comminuted. In pastry of all kinds, and sweetmeats, they form a very necessary ingredient as a flavouring article; medicinally they are supposed, on account of their unctuous quality, to deaden acrimonious humours and to give relief in heart-burn; six or eight peeled and eaten at a time answering the purpose. The true composition of the kernel was first made known by Boullay, who shows that it contains no starch, and that 100 parts are composed of fixed oil 54, emulsion or albumen 24, liquid sugar 6, lignin 4, pellicles 5, water 3.5, and acetic acid 0.5; so that, in fact, they are analogous to a concrete milk, and an emulsion may be considered as a vegetable milk. The principal constituent of the kernel, as will be seen above, is the oil, which is obtained from varieties by expression. That of the sweet almond is of a pale yellow, and very liquid, of specific gravity 0.917 to 0.920—consisting of margarine 24 and elaine 76 parts in 100. Its action and uses are laxative and emollient, and it may be employed for the same purposes as olive oil. As a laxative, it is mixed with an equal volume of syrup of violets and roses, and given to new-born infants. To assist in allaying troublesome coughs, it is not unfrequently used in the Medicine.
Oil.

form of linctus, with confection of hips and syrup of poppies. It also forms the basis of many scented oils.

Medicine. "Bitter almonds are poisonous, and have proved fatal to men, children, and small animals. They contain less fixed oil than the sweet, and a portion of prussic or hydrocyanic acid, upon which their narcotic properties depend. Though not officinal, the oil requires to be noticed, as it is sometimes used therapeutically, and has been found of some service in intermittent fevers. It is a powerful poison. It is used like hydrocyanic acid, and sometimes for the same purposes."

Medicinal oil. Native physicians in Bengal and Upper India use the kernel in alterative medicines, and the oil is applied to the head in chronic cephalalgia, vertigo, and other disorders of the brain.

Mr. Baden-Powell, in his "Punjab Products," states that the bitter almonds are the fruits of *Amygdalus amara*.

Prunus armeniaca. *Common Apricot.*

Vern.—*Persian*, Khubani; *Hindi*, Zardalu, Khubani.

Fruit. The apricot tree is a native of Kaghan, China, West of Asia, and the Himalayas, at an elevation from 7,000 to 13,000 feet. The produce is a common article of food in Kulu. An excellent oil, of a pale-yellow colour, is obtained by expression of the kernels. A considerable quantity of dried apricots are annually imported into India from Afghanistan. The tree yields a gum similar to gum arabic. The fruit is used in medicine as a warm remedy in coughs, skin diseases, flatulency, and putrid fevers.

Oil.

Gum.

Medicine.

Prunus communis. *The Plum, Damson, &c.*

Vern.—*Hindi*, Alubokhara, Alucha, Chhotá álu.

Fruit. Cultivated in the Himalayas for its fruits; many European varieties have lately been introduced. Mr. Atkinson mentions three varieties commonly cultivated in Kumaun, having blue, yellow, or small fruits, of which the three vernacular names are given above. Alubokhara (var. *bokhariensis*) is used in medicine as a refrigerent and laxative. The dried drupes of aluchá (var. *domestica*) are used as a laxative in coughs and asthma.

Medicine.

Prunus persica. *The Peach.*

Vern.—Chota álu.

The fruit is prescribed as a demulcent and antiscorbutic and stomachic, and the oil obtained from the kernels is used as a vermifuge and hair tonic.

Psidium Guava. *White Guava.*

Syn.—*Psidium pyrifera*.

Vern.—*Bengali*, Peárá; *Hindi*, Amrud; *Tamil*, Vellai-goyya; *Telugu*, Tella-gayya.

Fruit. The guava is cultivated in many parts of India for its much-esteemed fruit, which, in North India, is largely eaten by all classes of the people, and of which the guava jelly is made. The bark is used in medicine as an

Medicine.

astringent, and both the bark and the leaves may be used in dyeing and tanning.

Psoralea corylifolia.

Vern.—*Bengali*, Hakuch ; *Dakhini*, Bavauchi ; *Tamil*, Karpuva-arishi ; *Telugu*, Karu, Bogi-vittulu.

A common herbaceous weed, found in Bengal and South India. The seeds are aromatic and bitter; might be used as tonic and alterative; natives consider them useful in skin diseases. Dr. K. L. Dey states that the extract from the seeds is a specific for white leprosy. Medicine.

Pterocarpus acerifolium. See Kanak-champa.

Pterocarpus indicus. *Andaman Red-wood.*

Vern.—*Burmese*, Padouk.

A lofty tree, found in Burma and the Andaman Islands; considered the most valuable wood in the Andamans; used for furniture, carts, gun-carriages, &c. Messrs. Jackson and Graham, cabinet-makers, made a very good report of it, furniture made of this wood and exhibited by them at the Paris Exhibition of 1878 was much admired. Timber.

Pterocarpus Marsupium.

• **Vern.**—*Hindi*, Bijá-sal ; *Dakhini*, Dhorbeula ; *Tamil*, Veagai ; *Telugu*, Egisa.

A large deciduous tree, found in Central and South India. The tree yields a red gum, like that of *Butea frondosa*. The heart-wood is full of gum-resin and may be made to dye yellow. Wood durable, takes a fine polish; used for doors, posts, beams, furniture, &c., and proved to be suitable for railway sleepers. Two samples of oil, the produce of this tree, have been sent by the Madras Forest Department. Gum.
Dye.
Timber.
Oil.

Pterocarpus santalinus. *Red Sandal-wood.*

Vern.—*Bengali*, Rakta-chandan ; *Hindi*, Lal Sandal ; *Tamil*, Shenshanda-num ; *Telugu*, Erra-gandhapu-chekka.

• A small tree, found in South India, chiefly in Kadapa and Karnúl districts. Red sandal is brought from these districts to Madras in billets or root-pieces, and thence exported. Its chief value is as a dye wood, containing a red colouring principle, "santalin," which, dissolved in alcohol, imparts a beautiful salmon-pink colour to cloth. In Europe it is used to dye leather and wood, and as a colouring agent in pharmacy. In native medicine, the wood is used as an astringent, and an ointment of it is applied externally in headache. The wood is close-grained, used for carved work in houses and temples. Dye.
Medicine.
Timber.

Ptychotis Ajowan. See *Carum copticum*.

Ptychotis involucrata. See *Carum Roxburghianus*.

Pucedanum graveolens. *Dill Seed.***Syn.**—Anethum Sowa.**Vern.**—*Sanskrit*, Sitasiva; *Bengali*, Sulpha; *Hindi*, Soya; *Dakhini*, Sowa; *Tamil*, Sthakuppa; *Telugu*, Saddapa.

Spice.

Medicinal oil.

Medicine.

An annual, 2 to 4 feet; a native of Southern Europe; cultivated in almost all parts of India for its produce, the Dill seed of commerce, which is used as a condiment as well as in medicine. The seeds yield by distillation a volatile oil, soluble in alcohol, ether, and in 144 parts of water. Mr. Murray states that the seeds are considered emenagogue, and are also eaten by natives after meals to relieve flatulency.

Pueraria tuberosa.**Vern.**—*Hindi*, Bilai-akand; *Telugu*, Dari.

Medicine.

A large creeper, found in the Kumaun Himalayas and the Circar mountains. The tubers are applied as a poultice on swollen joints, and used internally as a demulcent and refrigerent in fevers. Large quantities are annually exported from Kumaun to the plains below. [Put under "Food Crops" in Amsterdam List by mistake.]

Punica Granatum. *Pomegranate.***Vern.**—*Bengali*, Dalim, Bedana; *Hindi*, Anar; *Tamil*, Magilam; *Telugu*, Dadana.

Fruit.

Dye.

Medicine.

The pomegranate tree is common all over India, but the fruit is of a very inferior quality. The fruit sold at the markets of Northern India in the cold season chiefly comes from Kandahar; the inside of these are of a beautiful red colour, with small seeds, and are of great lusciousness. The fruits with broken surface, called *be-dana*, are of superior quality, while those with a smooth surface, called *muscat*, are sour, and have large seeds. The pomegranate tree is abundant in the lower Himalayas, but the fruit is very poor—useful, however, for its rind, called *náspál*, which is largely employed in dyeing cloth a greenish colour, in tanning, and as an astringent medicine. It is of a reddish-brown colour, hard and leathery, and contains 18·8 per cent. of tannin, with 10·8 of extractine, and 17 1 of mucilage. The flowers also yield a fleeting dye of a light-red colour. Morocco leather is tanned and dyed with pomegranate rind. The root-bark is a valuable anthelmintic.

Pyrethrum indicum. *Indian Fever Few.***Syn.**—Chrysanthemum.**Vern.**—*Bengali*, *Hindi*, *Ākarkara*; *Tamil*, *Ākarkaram*.

Medicine.

The root is imported into India, where it is used in medicine, and prescribed internally for colic, hysterical affections, pain in the head, lethargic complaints, and typhus fever. Externally it is given in paralysis

of the tongue, chronic ophthalmia, and rheumatic affections of the face. As a masticatory, it is used to check spontaneous salivation.

***Pyrus communis.* Pear Tree.**

Vern.—Hindi, Naspati.

• Pear is cultivated in the Himalayas as well as in the plains of Northern India. Many European varieties have lately been introduced. The fruit is eaten raw or made into conserve.

***Pyrus Cydonia.* See *Cydonia vulgaris*.**

***Pyrus Malus.* The Apple.**

Vern.—Hindi, Sev.

The tree is found wild in the North-West Himalayas, and cultivated in Kashmir, from which place and Afghanistan the fruits found in the markets of Northern India in the cold season are brought. Great encouragement has of late been given to apple cultivation in Kumaun, and the supply of fruit is yearly increasing.

Q

***Quercus infectoria.* (Reduced by Brandis to *Q. lusitanica*.) Gall-nuts.**

Vern.—Bengali, Hindi, Maju-phal.

It has not been ascertained whether the gall-nuts sent as samples are imported, or the produce of the Himalayan forests. Gall-nuts are largely used as an astringent medicine and as a black dye.

Medicine.
Dye.

Quercus lamellosa.

A very large tree found in the Darjiling forests. The bark and the acorns are used in dyeing and in medicine. Wholesale price given by the Forest Officer is about 3s. per cwt.

Dye.
Medicine

***Quercus pachyphylla.* Oak.**

Vern.—Nepali, Bara-katus.

• A large evergreen tree, found on higher ranges of the Sikim Himalayas. The bark and the acorns are used in dyeing and tanning, and as an astringent medicine; the wood is used for planking, shingles, and other purposes.

Dye.
Medicine.
Timber.

Quercus semecarpifolia.

Vern.—Punjabi, Barchar, &c.; Hindi, Karshu; Nepali, Gheshi.

A large evergreen tree of the Western Himalayas. The wood is used

Fodder. for building purposes, door-frames, agricultural implements, &c. The leaves are stored for winter fodder.

R

Randia dumetorum.

Vern.—*Bengali*, Hindi, Mainphal; *Tamul*, Madu-karray; *Telugu*, Manda.

Medicine. A deciduous tree, found in the jungles all over India. The fruit and the root-bark are used in medicine; the former is heating and a powerful emetic, used internally in colic, and as an application to swellings and as a poison to destroy fish; the latter is used in infusion to nauseate.

Dye. In calico-printing the fruit is employed as a colour-intensifier. Mr. Gamble

Fruit. states that, when ripe, it is roasted and eaten as food.

Rao grass. (Unidentified.)

Fibre. A fibrous grass found in Bengal; appears to be suitable for the manufacture of paper.

Raphanus sativus. *Radish.*

Vern.—*Bengali*, Mula; *Hindi*, Muli.

Food. Extensively cultivated in the plains. It is largely used for food in the North-Western Provinces, where the poor people eat it raw. It is also used as a vegetable. In the famine of 1878, radishes were a great help to the people. Oil is extracted from the seeds, which is used for culinary purposes. In medicine the seeds and the root act as a diuretic and laxative.

Oil.

Medicine.

Raro, an oil seed. (*Brassica campestris*, var. *glauca*.)

Renu-baluka. (Unidentified.)

Medicine. A medicinal substance, resembling very fine grains of sand; purchased at the Calcutta market; properties not known.

Rheum Emodi, Moorcroftianum, &c. *Rhubarb.*

Vern.—*Bengali*, Reuchini; *Hindi*, Dolu.

Medicine. The Himalayan rhubarb is said to be the produce of four species of rheum which grow in abundance in many parts of the hills. Rhubarb contains Chrysophanic acid, tannic acid, resin, and a large proportion of oxalate of lime, and is used as an astringent tonic and purgative in diarrhoea, dyspepsia, and derangement of the liver. It also yields a yellow dye. The leaf-stalks are eaten boiled with sugar and make an excellent preserve.

Dye.

Food.

Rhizophora mucronata.

Vern.—*Bengali*, Bhara; *Telugu*, Upu-poma; *Burmese*, Biyu.

A small evergreen tree of the muddy shores of India, Burma, and the Andaman Islands. Mr. Gamble says that the wood is good, but rarely used; fruit edible; bark used in tanning.

Timber.
Fruit.
Tan.

Rhus succedanea.

Syn.—*Rhus-Kakrasinghee*.

Vern.—*Punjabi*, Tatri, &c.

A small tree, found in the Himalayas and the Khasia Hills. The juice of the leaves blisters the skin; the seeds yield a tallow, of which white candles are made in Japan.

Medicine.

The horn-like excrescences known in the market as *kakrasinghee* (sample of which has been sent to Amsterdam under the name of *R. Kakrasinghee* and *succedanea*) have now been ascertained to be the produce of *Pistacia Integerrima*.

Oil.

Ricinus communis. Castor Seed.

Vern.—*Bengali*, Reri; *Hindi*, Andi; *Dakhini*, Yarandi; *Tamil*, Amanakkan-kottai; *Telugu*, Amudapu-vittulu.

Castor seed is one of the most important oil-seeds of India. It is largely cultivated in Behar and North-Western Provinces, and is sown with other crops. There are three varieties distinguished from the colour of the seeds,—viz., brown, black, and red. At the Calcutta market the castor seeds brought from Madras and Colgong in Upper Bengal have a good reputation. The seeds if cold-drawn yield about 25 per cent. of oil; if heated at the time of extraction, they yield about 35 per cent. The cold-drawn oil is used in medicine as a purgative, and the latter oil for burning in lamps. The exports during the five years ending 1880-81 were as follows:—

Oil.
Medicine.

	Quantity.	Value.
	Cwts.	£
1876-77	529	229
1877-78	4,521	2,741
1878-79	74,214	50,005
1879-80	237,601	118,076
1880-81	76,461	43,385

Rosa alba (var. glandulifera.)

Vern.—*Bengali*, Hina; *Seunti*.

A climbing plant, found in the Himalayas. The flowers are used in perfumery, and as a cooling medicine in fevers and palpitation of the heart.

Perfume.

Medicine.

Rosa damascena. *Damask Rose.*

Vern.—*Bengali, Hindi, Guláb.*

- Perfume.** Cultivated in gardens for its flower; used in perfumery to make rose-
Medicine. otto and rose-water, and as a refrigerent medicine. It is also made into a sweet conserve.

Rosa moschata. *Musk Rose.*

Cultivated in gardens for its flower; used like *R. damascena*.

Rottlera tinctoria. *See Mallotus Philippinensis.***Rubia cordifolia.** *Indian Madder; Manjit.*

Vern.—*Bengali, Manjistha; Hindi, Manjit; Tamil, Manjitti; Telugu, Tamravalli.*

- Dye.** The plants producing the manjit dye is common in the Himalayas. The dye is largely exported to the plains. The colour of manjit is bright, though not so durable as that of the European madder. Like madder, the utility of manjit results from the presence of two colouring principles, called alzarine and purpurine. These will not attach to cotton fabrics, unless in combination with a metallic oxide. It is, however, too expensive a dye to be much used. It is largely employed to colour medicinal oils, and as
Medicine. an astringent, is considered useful in skin diseases

Saccharum Munja. *Munj Grass.*

Vern.—*Hindi, Munj, Sirki*

- Fibre.** Munj grass is common in North India. Strong ropes and strings are made from the sheathing leaves of the culms, which are first softened by beating with a mallet. Munj rope is used in rigging boats, for the bottom of cots and chairs, and in the manufacture of mats. This grass is a good
Mats. paper material; large quantities of it are used for this purpose at the
Paper stock. Upper India Paper-mill at Lucknow and at the Bally Mills near Calcutta. The upper half of the culm known as *sirki*, which is not suitable for fibre in rope-making, is used in thatching houses.

Saccharum officinarum. *Sugarcane.*

Vern.—*Sanskrit, Ikshu, Bengali, Akh, Hindi, Ukh, Ganna, Tamil, Kairamba; Telugu, Sheruku.*

- Saccharine.** Sugarcane is extensively cultivated all over India. There are many varieties of it; some are suitable for the extraction of sugar, while others are sucked raw. Sugarcane is a paying crop, but its cultivation requires much care, heavy manuring, and frequent irrigation. The juice is obtained

by grinding the cane, which, when boiled down, becomes unrefined sugar called *gur*. Unrefined sugar, when kept in a liquid state, is called *rab* but in many parts of the country it is generally made into cakes for convenience of transport. Sugarcane stalks, out of which the juice has been extracted, and the leaves, are suitable for the manufacture of mats and paper, but at present they are used only as fuel. Paper stock

Saccharum Sara.

Vern.—Bengali, Sar; Hindi, Sarpat; Telugu, Gundra.

Common in the plains. The fibre is inferior to munj. The reeds are used in matting, thatching, and to make chairs. The flower is used to stuff pillows and may be used as a paper material. Fibre.

Saccharum spontaneum.

Vern.—Bengali, Kush; Hindi, Kans; Telugu, Rellu-gaddi.

Common in Bengal, the submontane tract of the Himalayas, and Bundelkhand. The roots of this grass go deep into the soil, and the grass cannot be easily eradicated if it once takes possession of the field. In this way large areas of land in Bundelkhand have been rendered uncultivable. The grass is used to make rope and mats and for thatching. Fibre.

Sagus laevis. Sago Palm.

Sago is imported from the Eastern Archipelago. According to Dr. Balfour, it is made in South India from *Rhapis* (? *Borassus*) *flabelliformis*. Sago is used as an invalid diet. Medicine.

Sailaj. (Unidentified.)

A medicinal substance, purchased at the Calcutta market; properties not known. Medicine.

Sajji or Barilla.

Sajji is an impure carbonate of soda, prepared by burning certain alkaline plants. It is used chiefly as washing-soap. Sajji is of three qualities,—*chuwra*, the first quality; *butha*, the next; and *khara*, the third quality. In medicine it is used as an antacid. Soap. Medicine.

Salammoniac. Chloride of Ammonium.

Vern.—Bengali, Nishedal; Hindi, Nausadar; Tamil, Nava-charum.

Salammoniac is a compound of ammonia and hydrochloric acid. It is largely manufactured in brick-kilns in the Karnal district of the Punjab, and is used in tinning and forging metals, in the formation of freezing mixtures and in the manufacture of liquid ammonia. In medicine it is prescribed in inflammation of the liver and spleen, and in facial neuralgia. Medicine.

Salix tetrasperma.

Vern.—*Hindi*, Bed; *Dakhini*, Wajunj; *Burmese*, Momakha.

Timber.

Tan.

Medicine.

A moderate-sized deciduous tree, found in moist places throughout India. Wood rarely used except in Assam, where posts and planks are made. Bark is said to be used in tanning, and in medicine as a febrifuge.

Salpani (*Desmodium gangeticum*).

Medicine.

A weed, found in moist places of Bengal and South India. The whole plant is used in decoction as a febrifuge and antecatharrhal.

Salt. *Chloride of Sodium.*

Vern.—*Sanskrit*, Lavan; *Bengali*, Lún, *Hindi*, Nimak, *Dakhini*, Mit; *Telugu*, Uppu.

Salt.

The alimentary salt used in India may be divided into four classes,—the sea-salt, lake-salt, salt obtained by evaporation of water from saline earth in the interior, and the rock-salt. Formerly the seaboard tracts were entirely supplied by local manufacture, but this has now almost totally been superseded by Liverpool salt, which is brought as a ballast by ships coming for Indian produce. Lake-salt is obtained from Sambar Lake in Rajputana, and a small quantity is also imported from Tibet across the Himalayas, which meets the demand of the people in the higher ranges. Rock-salt is obtained from the extensive salt mines of the Punjab. A collection of salts has been sent by the North India Salt Revenue Department, which consists of—

<i>Rock.</i>	<i>Lake.</i>	<i>Salt obtained by evaporation.</i>
Crystal rock.	Sambhar Lake.	Pachbhadra.
Didwana.	„ Pan.	Salambha.
Drang.	„ Kohkla.	Shalodi Pan.
Guma.	„ Katigi.	Sultanpur.
Kalabagh.	„ Sarkot.	Farukhabad refined.
Mayo Mines, pink.		
Ditto, white.		

Salt is a Government monopoly, and yields an annual revenue of more than seven millions sterling pounds. The quantity of Liverpool salt imported during the five years ending 1880-81 was as follows:—

	Quantity. Tons.	Value. £
1876-77	298,776	430,890
1877-78	254,231	401,365
1878-79	274,180	593,611
1879-80	352,238	762,532
1880-81	373,376	665,517

Medicine.

Rock-salt, called *Lahori nimak*, is a digestive and appetising agent. The dross or scum of glass furnace, called *kachlun*, is used in small doses as a saline refrigerant, emetic, and purgative. Black-salt (*Bit-lún*), artificially pre-

pared by the addition of myrabolams to common salt, is used as a digestive medicine. Khári-lún, an impure sulphate of soda, is used in curing leather. Tan.

Samara Ribes. See *Embelia Ribes*.

Saltpetre.

Saltpetre is manufactured by evaporation of water from a mixture of water and earth containing crude salt. It is made in many parts of the Punjab and North-Western Provinces. Its manufacture in Behar has greatly declined in late years, causing much distress among the poorer classes. Two varieties of saltpetre are generally sold in the market,—crude saltpetre, and saltpetre washed, called *kalmi*. See also Potassic nitrates.

Samuk. (Unidentified.)

A shell, found in the marshes and tanks; used to make lime.

Sandstone, Flexible.

The sample has been supplied by the Superintendent of the Geological Survey. It is a partially decomposed metamorphic quartzite, occurring in the Aravali Hills at Kaliáná, 60 miles west of Delhi. Described in the Records of the Geological Survey of India, Vol. VII, page 9, 1874.

Sansevieria zeylanica. *Bowstring Hemp.*

Vern.—*Bengali*, Murvamúl, Marúl; *Hindi*, Murgabi; *Dakhini*, Múrgali, *Tamil*, Marúl; *Telugu*, Chaga.

A plant resembling the agave; grows in moist localities along the coasts. A soft white fibre is obtained by scraping off the pulpy part from the leaves, which is firm, hair-like and silky, and, according to Dr. Royle, "may, from its fineness, combined with tenacity, be applied to a variety of purposes." In Dr. Wight's experiments a rope made of this fibre bore a weight of 316 lbs. It has been made into fine cloth and twine. But until some cheaper method is discovered for the extraction of the fibre from the leaves, there is no prospect of its ever becoming an article of commerce. The root is prescribed in the form of electuary in chronic coughs and consumption. Fibre. Medicin.

Santalum album. *Sandalwood.*

Vern.—*Bengali*, Chandan; *Hindi*, Sandal; *Tamil*, Shanda-na-kattai; *Telugu*, Gandhapa-chekk; *Burmese*, Santaku.

A small evergreen tree, found in the dry regions of Southern India. The heart-wood is largely used in perfumery, the oil distilled from it being the basis of all ottos manufactured in the North-Western Provinces. Carved sandal-wood boxes and furniture made in Canara, Surat, and Ahmadabad are much prized. A paste made by rubbing the wood on a stone with a little water is given as an offering to the gods, and in ancient times Hindus Oil. Perfum. Timber.

Medicine.

anointed their bodies with it. This paste is used as a local application in swellings, headache, and cutaneous eruptions. The oil is supposed to be a remedy for special diseases. Mr. J. Deveria, of Manbhum, says that, in his estate in that district, sandal trees were until recently common in the forests, but every one of them has been cut down, and he is now endeavouring to re-introduce it.

Sapindus detergens and trifolius. *The Soapnut Tree.*

Vern.—*Bengali*, *Hindi*, *Ritha*; *Tamil*, Ponnankottai; *Telugu*, Kukudu-kayalu.

S. tripolatus (emarginatus) is a large tree, found in Bengal and South India, and *S. detergens* in North-West India. The fruits of both are brought to the market under the name of *Ritha*, which are largely used as a substitute for soap in washing silk and woollen cloths. An oil is obtained from the seeds. In medicine, the fruit is given internally in headache and epilepsy, and is also considered expectorant. Externally it is applied on pimples and abscesses. A gum obtained from the tree has been sent by the Madras Forest Department. See also *Acacia concinna*.

Soap.**Oil.****Medicine.****Gum.****Saram.** (Unidentified)**Fibre.**

A fibrous substance used by the Garos, a hill tribe of Assam.

Saussurea Lappa. See *Anclandia costus*.**Saytara.** (Unidentified.)**Medicine.**

A medicinal substance, purchased at the Calcutta market, properties not known.

Schleichera trijuga.

Vern.—*Bengali*, Kusum; *Hindi*, Kosum, *Tamil*, Pāvā, *Telugu*, Pashu, *Burmese*, Gyoben.

Timber.

A large deciduous tree, found in the Sub-Himalayan tract, Central and South India, and Burma. Mr. Gamble states that the "wood is very strong and durable; it is used for oil, rice and sugar mills, and for agricultural implements and carts. The lac produced on this tree is highly prized. The fruit is often eaten, and the seeds give an oil used for burning in Malabar."

Fruit.**Oil.****Scilla indica.** *The Indian Squill.*

Vern.—*Hindi*, Jangh Piyáz.

Medicine.

Found near tanks. The root is bitter like the ordinary squill, a powerful diuretic and expectorant, and emetic in large doses.

Scindapsus officinalis.

Vern.—*Bengali*, *Hindi*, Gajpippul, *Dakhini*, Hati-pippli; *Tamil*, Anai-tippili; *Telugu*, Enuga-pippalu.

Medicine.

The plant is found in moist forests; fruit used as a stimulant, anthelmintic, and diaphoretic.

Sea-foam (*Samudra-phen*).

The name "sea-foam" is a misnomer, being only a translation of the Sanskrit word "samudra-phen." The article sent is the bone of the cuttlefish found on the coasts, and used in making tooth-powder, to rub down paint, and to clean metals. Medicine.

Seed lac. *See* *Coccus Lacca*.

Semecrapus Anacardium. *The Marking Nut.*

Vern.—*Bengali*, Bhela; *Hindi*, Bhilāwa; *Tamil*, Shaing; *Telugu*, Jiri; *Burmese*, Chyai-beng.

A deciduous tree, found in the Sub-Himalayan regions and Eastern Bengal. An acrid juice obtained from the pericarp of the fruit is used as marking ink, the quality of which is improved by the addition of lime-water; green fruit is pounded and made into bird-lime; fleshy cup of the ripe fruit is eaten raw, dried, or roasted. The juice of the tree, as well as of the fruit, is a violent escharotic, causing swelling of the body and constitutional disturbance. In medicine the fruit is considered a very heating remedy, very efficacious if it agrees with the patient, otherwise highly prejudicial; prescribed in dropsy, fever, leprosy, syphilis, paralysis, and various other diseases. It is, however, chiefly used as a horse medicine. An oil obtained from the seeds is used in paralysis and anæsthesia. Sample of a gum obtained from this tree has been sent by the Madras Forest Department. Dye.
Fruit.
Medicine.
Oil.
Gum.

Sesamum indicum (and **orientale**). *Til Seed; Gingelly.*

Vern.—*Bengali*, *Hindi*, Til; *Tamil*, Ella; *Telugu*, Nuvvula; *Burmese*, Hnan.

Largely cultivated all over India for its produce, which is the Gingelly oil-seed of commerce. Two varieties are common, yielding black and white seeds. The seeds give by expression 40 to 44 per cent. of a pale straw-coloured sweet oil, which in India is largely used for culinary purposes, anointing the bodies, burning in lamps, and in the preparation of medicinal oils. It is suitable for the manufacture of soap. The seeds are parched and used as food, and also employed in confectionery. They are considered a stimulating remedy, applied externally in boils and rheumatic pains. The leaves are an effectual remedy for bowel complaints. The export of Gingelly seed during the five years ending 1880-81 were as follows:— Oil.
Food.
Medicine.

	Quantity. Cwts.	Value. £.
1876-77	1,307,815	868,293
1877-78	158,802	848,226
1878-79	1,039,687	799,621
1879-80	1,670,185	1,197,904
1880-81	1,907,008	1,312,693

Sesbania aculeata.

Vern.—*Bengali*, Dhanicha; *Tamil*, Erra-jilgua.

Fibre.

This hardy plant is found in Bengal and South India. The charcoal of the wood makes good gunpowder, and for that purpose it is largely cultivated in the neighbourhood of the Ichápur Gunpowder Factory in Bengal. A strong fibre is obtained from Dhanicha stalks, which is made into ropes and fishermen's nets, and it has been found to be very durable under water. At an experiment made in Fort William, a $3\frac{1}{2}$ -inch rope made of it broke with a weight of 75 cwts., the Government proof required of such rope being only 49 cwts. Dr. Royle was of opinion that this fibre should not remain neglected. Nothing has been done since Dr. Royle wrote his work on Indian Fibres.

Sesbania ægyptica.

Vern.—*Bengali*, *Hindi*, Jainti; *Tamil*, Kurum-chembai; *Telugu*, Suiminta; *Burmese*, Yathagyi.

Medicine.

A small tree, found in almost all parts of India, and in some places used as a hedge plant. The charcoal of the wood makes good gunpowder; leaves applied as a cataplasm to promote suppuration or absorption of boils and abscesses; seeds mixed with flour applied externally to itching of the skin, and are supposed to possess stimulant emmenagogue properties. The bark is made into a rough cordage.

Fibre.

Sesbania grandiflora. *Agati Tree.*

Syn.—*Agati grandiflora*.

Vern.—*Bengali*, Bak; *Hindi*, Basna; *Tamil*, Agati; *Telugu*, Avesi; *Burmese*, Paukpan.

Vegetable.

A tree, 30 to 35 feet; cultivated in Bengal for its flowers, which are given as an offering to the gods. In Madras and Burma, where the legumes are eaten as a vegetable, it is planted with the betel vine, to which it affords shade. There are two varieties, having white and red flowers. The bark is bitter and is used as a tonic; an infusion of it is also given in small-pox. Leaves in infusion used as an aperient in catarrh.

Medicine.

Seseli indicum. *See Ligusticum diffusum.***Sctara.** (Unidentified.)

Medicine.

A medicinal substance, purchased at the Calcutta market; properties not known.

Setaria italica. *Italian Millet.*

Syn.—*Panicum italicum*.

Vern.—*Bengali*, Kaun; *Hindi*, Kangni, Kauni; *Dakhini*, Korakong; *Tamil*, Tenney; *Telugu*, Koraju.

Cultivated for its seeds; used for food by the poorer classes. Mr. Atkinson says it is apt to produce diarrhoea, and that it renders beer more

intoxicating. In medicine it is regarded as astringent and diuretic, and Medicine.
is externally applied in rheumatism. There are two varieties in South
India, one common and the other called *shadday*.

Shamen. (Unidentified.)

Sample sent from Kumaun.

Medicine.

Shawls. See Textile fabrics.

Sheep-grease.

There is no trade in this article. The produce of the country is locally
consumed in machines, in making candles, and in shoe-making.

Shell lac. See *Coccus Lacca*.

Shells. Used for lime, &c,

Large quantities of lime are made by burning the shells found in the
marshes of Bengal and the Sundarbans. Lime thus obtained is considered
more valuable for building purposes than that obtained from limestone, and
fetches a higher price. It is also used in medicine, in calico-printing as a
"resist-paste," and also eaten with the betel leaves. Cowries are small,
white, glossy shells brought chiefly from the Laccadive and Maldive Islands.
They are used in the Indian currency as fractional part of a pice, the lowest
coin prevalent in India. About 3,000 cowries go to a shilling. Chank shell,
brought from the Gulf of Manaar, is made into a kind of trumpet for blowing,
at the sound of which the gods come down to partake of the offerings
made to them by pious worshippers. Bangles are manufactured from
them which in former days were extensively worn by Hindu women, but gold
has now almost entirely superseded such primitive ornaments. Mother-of-
pearl is made into buttons, knife-handles, &c., and also inlaid on the
white marble work of Agra. Many of the shells are used for food by the
poorer classes.

Shellus aspera.

A fibrous substance sent from Burma under this name.

Fibre.

Shorea robusta. The *Sâl Tree*.

Vern.—Bengali, Sal; Hindi, Sakua; Telugu, Gugal.

A large tree of the Sub-Himalayan regions and the forests of Central
India. The tree is very valuable for its timber, which is extensively used Timber.
for beams and door-posts. Formerly sâl logs were brought to Calcutta
from Nepal, but the supply has almost entirely ceased, owing to the
prohibition of their export by the Nepalese Government, and the demand

Gum.

Perfume.

Medicine.

Tan.

of the Calcutta market is now met by Burma teak, the supply of which is, however, diminishing. Extensive sâl forests exist in the Chhota Nagpur Division, which may be utilised when the railway under construction in this direction is completed. Large quantities of white transparent resin is obtained by incisions made in the bark, which is used as an incense, to caulk boats and ships, and to form varnishes. Medicinally it is employed to form plasters, as an application to indolent ulcers, and internally as a stimulant, and also in special diseases. The bark is used in tanning.

Sida carpinifolia.

Syn.—*S. acuta*.

Vern.—*Bengali*, *Hindi*, Kareta; *Tamil*, Vatta-tirippi; *Telugu*, Chitimuti.

Fibre.

Medicine.

A small plant, found chiefly in Southern India. A good fibre is obtained from the stems, of which a sample has been sent by the Madras Forest Department. The root is bitter and mucilaginous, prescribed in intermittent and chronic diarrhœa. It promotes perspiration and increases the appetite, and may be substituted for more expensive bitters.

Sida cordifolia.

Vern.—*Bengali*, Berela, Bala; *Hindi*, Bijband, Muttava.

Medicine.

Fibre.

A small weed, found in moist places. The mucilage of the plant is prescribed for dysentery and fevers; the root is considered cooling, astringent, tonic, and given in disorders of the nervous system, urinary organs, and of the blood and bile; the seeds are regarded as cooling, used with rice as a demulcent in dysentery and special diseases. The plant yields a fine white fibre.

Sida rhombifolia (var. *rhomboidea*).

Vern.—*Bengali*, Swet-berela; *Tamil*, Athiballa-chettu.

Fibre.

A small weed, growing in the rainy season. It is abundant in Northern Bengal. The stalks yield a soft, silky fibre. It was cultivated by Raja Krishnendra Narain Rai, of Balihar, who has supplied a sample of his produce. The result of his experiments is not known. A half-inch thick string made of the fibre bore a weight of 400 lbs., after an exposure of ten days to wet and sun. This fibre appears to be suitable for the manufacture of cloth and deserves attention.

Silk.

Vern.—*Sanskrit*, Patta; *Bengali*, *Hindi*, Re-ham; *Tamil*, Pattu.

Silk has been known to the Hindus from time immemorial, and its cultivation still gives occupation to thousands of persons. The principal seat of silk-rearing in India is North Bengal, but Bengal silk has of late got a bad reputation, owing partly to deterioration of the worm, and partly

to the fraudulent practices of native manufacturers. The colour of the Bengal silk is of a rich golden yellow ; it is also sometimes white, specially that reeled in April. The domesticated silk of commerce is generally the produce of the moth, which chiefly feeds on mulberry leaves, hence it is called *Bombyx Mori*. The Tasar silk is the produce of the forest tracts. It is very strong and glossy, and the proper way to dye it with brilliant colours has lately been discovered. The Tasar silk-worm feeds on the leaves of various wild trees. The eria silk-worm of Assam and Northern Bengal feeds on castor-plant leaves. Eria silk cloth is very durable, and it is said that one person's lifetime is not sufficient to wear out a garment made of it. Muga is a wild silk of Assam, and of all the wild silks it is next in importance to Tasar; the worm feeds chiefly on the leaves of the Sám tree (*Machillus odoratissima*).

The following figures show the export of silk from British India during the five years ending 1880-81 :—

	Quantity, lbs.	Value, £
1876-77	150,567	58,844
1877-78	145,186	46,890
1878-79	205,116	53,641
1879-80	271,698	88,130
1880-81	207,030	20,085

•**Sinapis, species of.** See Brassica.

, **Srguja oil-seed or Ramtil.** See Guizotia oleifera.

Sittu-duppa. (Unidentified.)

A fibrous substance sent from Madras.

Fibre.

Skins.

There is a large trade in goat and sheep skins. These are collected in the raw state in the interior and brought to the port towns for export. A large quantity is annually prepared for local use. The trade in deer-skin is very unimportant, although large herds of the animal can be seen in many parts of the country, specially in the waste tracts of Northern India. A skin of musk deer, male, one of female, one of monkey, and one of wild Himalayan sheep, have been sent from Darjiling by Mr. E. G. Chester, the Forest Officer.

The skin of musk deer has been procured from the snowy hills of Independent Sikkim ; not procurable in large quantities. The monkey skin has been obtained from Tibet ; not procurable in any quantity, as it is difficult to shoot the animal on account of the rocky nature of the ground which it inhabits. The wild sheep skin also is not procurable in large quantities.

Soda. See Salt and Sajji.

Sodal biboras. See Borax.

Sodal carbonas. See Sajji.

Sodal murias. See Salt.

Sokai. (Unidentified.)

Medicine. 'A medicinal substance, purchased at the Calcutta market; properties not known.

Solanum Melongena. *Egg-plant; Brinjal.*

Vern.—Bengali, Baigun; Hindi, Bhāta; Dakhini, Wangi; Tamil, Kuthirikāi; Telugu, Vanga-chiri-vanga; Burmese, Kha-yan.

Fruit. The egg-plant is extensively cultivated all over India for its fruit, which is eaten cooked as a vegetable. The fruits are large, ovoid, firm, innocent and insipid, and are either black or white in colour, the former being the most esteemed. In medicine, the seeds are used as a stimulating remedy and the leaves as a narcotic.

Solanum oviferum has pulpy fruit, which is used in medicine as a narcotic.

Solanum nigrum. *Night Shade; Fox Grape.*

Vern.—Bengali, Kakamachi; Hindi, Mako; Tamil, Munna-takali-pullum; Telugu, Kanchi-pundu.

Medicine. A weed, found in waste lands all over the country. Root used as an expectorant in coughs; berries considered a cooling medicine, employed in fever, diarrhœa, eye diseases, hydrophobia, &c.

Solanum tuberosum. *Potato.*

Vern.—Bengali, Hindi, Alu.

Food. 'Potato was introduced into India about the year 1792. It is now extensively cultivated as a food-crop. The North-West Himalayas produce large quantities of potato, which are exported to the plains. Many European varieties are cultivated here. In medicine, dried slices of potato are used as a substitute for salep-misri (*Orchis mascula*).

Medicine.

Sorghum bicolor.

Vern.—Bengali, Deodhan.

Food. Cultivated as a food-crop. There are two varieties, one red and the other black.

Sorghum saccharatum. *Sorgho.*

Vern.—Hindi, Vilayati Joar; Dakhini, Shalu.

This is a newly-introduced plant. There are three varieties, distin-

guished from the colour of the seeds,—red, amber, and black. The stalks afford a nourishing food for cattle, and also yield sugar. The grain is eaten made into cakes like the Joár. Saccharine.
Food.

Sorghum vulgare. *Great Millet.*

Vern.—Hindi, Joar, Junri; Dakhini, Joari; Tamil, Cholan; Telugu, Juralu; Burmese, Pyoung.

Joár is one of the staple food-crops of Upper India. The poorer classes entirely live upon it for some months of the year. There are two varieties, one red-seeded and the other white-seeded. The stalks form a good cattle fodder, and are occasionally sown close for a fodder crop only. Joár contains about 15·53 per cent. of nitrogenous ingredients, 83·67 of non-nitrogenous ingredients, and 1·26 of inorganic matter. Food.
Fodder.

Soymida febrifuga. *Indian Red Wood.*

Vern.—Bengali, Rohina; Hindi, Rohan; Tamil, Shem; Telugu, Sumi.

A large deciduous tree of Central India and Dekhan. The bark is bitter and astringent, useful in fevers and disorders of the bowels; it may also be used in tanning. The red-coloured wood is durable, and is used for furniture and agricultural implements. Medicine.
Tan.
Timber.

Spathodea falcata. *See Dolichandrone falcata.*

Spices. *See Condiments.*

Spinacia oleracea. *Common Spinage.*

Vern.—Bengali, Pálang; Hindi, Palki.

Largely cultivated for its leaves, which are used as a vegetable. The seeds are considered a cooling remedy, useful in difficulty of breathing, inflammation of the liver, and in jaundice. Food.
Medicine.

Spondias mangifera. *The Hog Plum.*

Vern.—Bengali, Hindi, Amra; Tamil, Katma; Telugu, Aravi-mamadi; Burmese, Gway.

A deciduous tree, found in the Sub-Himalayan regions, Bengal, Burma, and South India. The fruit, which when ripe smells somewhat like mango, is eaten, and pickled or preserved when green, or made into curries. A gum resembling gum arabic is obtained from the tree. The bark is sometimes used as a refrigerent medicine. Fruit.
Gum.
Medicine.

Sterculia ordata.

Vern.—Burmese, Shoudung.

A fibre sent from Burma under this name.

Fibre.

Stereospermum chelonoides.

Vern.—Bengali, Dharmara; Hindi, Pader; Tamil, Padri; Telugu, Tagada; Burmese, Thakuppo.

Timber.
Medicine.

A large deciduous tree of Bengal, Burma, and South India. The wood is moderately durable, used for building purposes and furniture. The roots, leaves, and flowers are used in decoction as a febrifuge.

Stereospermum suaveolens.

Syn.—Bignonia suaveolens.

Vern.—Sanskrit, Patali; Bengali, Parul; Hindi, Sammi; Telugu, Padari.

Medicine.

A middle-sized tree, native of South India, Bengal, and the lower Himalayas. The bark and the root in decoction are given as a cooling diuretic and tonic; flowers, rubbed with honey, check hiccup; the ashes are used in the preparation of alkaline water and caustic pastes.

Stick lac. See *Coccus Lacca*.

Strychnos Nux-vomica. *The Snake-wood, Nux-vomica, or Strychnine Tree.*

Vern.—Bengali, Hindi, Kuchila; Tamil, Yetti; Telugu, Mushti; Burmese, Khab-oung.

Medicine.

A moderate-sized evergreen tree of Bengal, Burma, and South India. All parts of the plant (except the pulp of the fruit, which is eaten by cattle, monkeys and birds, and the flowers) are poisonous, but the bark and the seeds only are used in medicine as a stimulant of the spinal chord, and a nervine tonic. In European medicine the seeds are extensively employed; they contain two powerfully poisonous alkaloids, *viz.*, strychnine and brucine and an acid. The seeds are largely exported for the manufacture of strychnine. The wood is adapted for fancy work and cabinet-making.

Timber.

Strychnos potatorum. *The Clearing Nut Tree.*

Vern.—Bengali, Hindi, Nirmalli; Dakhini, Chil-binj; Tamil, Tettan-kottai; Telugu, Chilla-ginjal.

Medicine.

A moderate-sized evergreen tree of Bengal, Central and South India. The seeds have the remarkable property of clearing muddy water. It is considered an emetic by the natives, but Dr. Bidie doubts it.

Styrax Benzoin. *Gum Benzoin.*

Vern.—Bengali, Hindi, Lubán.

Perfume.
Medicine.

The tree is a native of the Malay Archipelago. It yields the gum benzoin of commerce, which is used as an incense by the Muhammadans. It contains a resin with a large proportion of benzoic acid; reckoned a very useful stimulant, expectorant, and diuretic, employed in chronic bronchitis, laryngitis, and also in jaundice and diseases of the urinary organs. It is also used as a hair-wash.

Sugar.

Vern.—Bengali, Hindi, Gúr, Ráb, Shakkar; Tamil, Shakkarai; Telugu, Panchadara; Burmese, Kyan.

Sugar has been known in India from time immemorial. The principal sources from which sugar is obtained in India are *Saccharum officinarum*, *Phœnix sylvestris*, *Borassus flabelliformis*, *Cocos nucifera*, *Arenga saccharifera*, *Nipa fruticans*, *Bassia butyracea*, and *Sorghum saccharatum*; the first two are, however, the most important. A good collection of sugar, showing the different degrees of refinement, has been sent to Amsterdam. There is very little export trade in sugar.

Sulphur.

Vern.—Bengali, Hindi, Gandhak; Tamil, Genda gum; Telugu, Ghenḍa gum; Burmese, Kán.

Sulphur is found in many parts of India, but the Disarming Act restricts its trade. It is used in medicine as a laxative and also in skin diseases. Medicine.

Syama grass. (*Oplismenus frumentaceus*.)

Used as a green fodder in Bengal during the rains.

Fodder.

Syama sundari.

The seeds, under this name were sent from Bareilly. It has been ascertained to be the seeds of *Cyamopsis psoralioides*, and not an oil-seed.

Symplocos Sumuntia.

Vern.—Bengali, Lodh; Hindi, Patháni-lodh.

A small tree of the dry forests of Bengal and Burma. The bark and the leaves yield a yellow dye which is used along with madder. Mr. Liotard thinks the leaves are employed more as a mordant than a colouring material. In medicine it is reckoned cooling and astringent, and prescribed in bowel complaints, diseases of the eye, bad ulcers, &c. Dye. Medicine.

Syuta. Fruit of *Pinus longifolia*.

T

Tagetes erecta (reduced to *Calendula officinalis*). Marigold.

Vern.—Bengali, Hindi, Genda.

Cultivated in gardens for its handsome yellow flowers, which are made into garlands for the idols and for the decoration of houses in festivities. A yellow dye, extracted from the flowers, is used by the poorer classes to dye.

Medicine. dye their cloths at home. In medicine they are used to purify the blood and as a remedy for eye diseases.

Tamarindus indica. *Tamarind.*

Vern.—*Sanskrit*, Tintiri, *Bengali*, Tetul; *Hindi*, Imli; *Tamil*, Puh, *Telugu*, Chinta; *Burmese*, Magyi.

Fruit. A large evergreen tree, cultivated throughout India and Burma. It produces large quantities of an acid fruit which is eaten with rice, raw or used as a condiment in cooking vegetables, pulses, fish, &c. It is dried and kept in store in almost every house in Bengal. This is one of the Indian products "which should form an article of export to Europe. In medicine it is used as a laxative and antiscorbutic; mixed with sugar it forms a good refrigerent drink. An infusion of the leaves is given as a cooling drink in dysentery. The kernel of the seeds is stomachic.

Medicine.

Timber. The wood is very tough, but highly prized for cart-wheels, mallets, and sugar, oil and rice mills. Powdered and mixed with gum, the seeds form a strong cement.

Tambul. (Unidentified.)

Medicine. A native medicinal substance, purchased at the Calcutta market. Properties not known.

Taraxacum officinale. *Dandelion.*

Medicine. The plant is found in the Himalayas. It is a valuable remedy for hepatic diseases. The whole plant is bitter, but the root is chiefly used in medicine as tonic and diuretic.

Tarkchur. (Unidentified.)

Medicine. A native medicinal substance, purchased at the Calcutta market; properties not known.

Tauri. (Unidentified.)

Medicine. Probably the legumes of some *Bauhinia* species, used as an astringent medicine, also in making ink along with myrabolams. It may be used in dyeing a black colour, also in tanning.

Dye.

Taxus baccata. *The Fir.*

Vern.—*Hindi*, Tūner, Gell, Lūst, &c.

Timber. A large evergreen tree of the Himalayas and the Khasia Hills. The tree is considered sacred. The wood is used for native furniture, for carrying poles, &c., and Mr. Gamble is of opinion that it deserves to be better known and more extensively used, as "it is very strong and elastic, and works and polishes beautifully." The wood is burnt as an incense, the bark is used as a substitute for tea, the berries are edible, and the leaves exported to the plains and used in medicine.

Perfume.

Fruit.

Medicine.

Tea. (*Camellia theifera*.)

The cultivation and manufacture of tea has now become one of the most important industries of India. It is now almost entirely conducted with European capital, and the article manufactured is of so superior a quality that Indian tea is gradually driving out China and Japan tea from the markets of Europe, Australia, and America. Indian tea became better known in Australia during the Melbourne Exhibition, since which time the export to that country is annually increasing, as the following figures will show :—

Year.	Quantity, lbs.	Value, £
1876-77	42,269	4,278
1877-78	24,359	2,330
1878-79	62,487	5,940
1879-80	85,994	6,474
1880-81	807,608	51,510
1881-82	906,762	67,570

The total quantities of Indian tea exported by sea to foreign countries during the same years are as follows :—

Year.	Quantity, ll	Value, £
1876-77	27,784,124	2,607,425
1877-78	33,159,075	3,044,571
1878-79	34,432,573	3,138,123
1879-80	38,173,521	3,051,020
1880-81	40,417,510	3,054,240
1881-82	48,691,725	3,609,130

The places where tea is cultivated in India are the Province of Assam, including Silhet and Kachar; the southern slopes of the Himalayas, including Darjiling Tarai, Kumaun, Kangra, &c., the table-land of Chhota Nagpur in Bengal; and the upper slopes of the Nilgiris. Tea was found growing wild in Assam, and its cultivation first commenced in that province about the year 1837. There are now upwards of two thousand plantations, with an area of more than 200,000 acres actually under tea cultivation. A large collection of samples has been sent to Amsterdam as detailed in pages 149 to 157 of the "Classified List."

Tectona grandis. *The Teak Tree.*

Vern.—Bengali, *Mindi*, Sagun, *Dakhini*, *Ság*; Tamil, *Tekku*; Telugu, *Teku*; Burmese, *Kyán*.

A large deciduous tree, found in Burma, Central and South India. The teak tree is famous for its timber, which (Mr. Gamble states) "does not split, crack, warp, or alter its shape when once seasoned; it does not suffer in contact with iron, and is rarely, if ever, attacked by white-ants. Its durability is probably due to the aromatic oil contained in the wood." **Timber.**

Dye.
Oil.
Medicine.

It is the chief timber of India and Burma; it is exported largely for ship-building and the construction of railway carriages. In India it is used for all purposes of house and ship building, for bridges, sleeper, furniture, and most other purposes. The leaves give a red dye; they are very large, and are used as plates, for packing and for thatching. The oil is extracted from the wood in Burma, and is used medicinally as a substitute for linseed oil and as a varnish."

The supply of teak wood is said to be diminishing.

Telchabra. (Unidentified.)

Name of a dried fish sold at the Calcutta market.

Teli. (Unidentified.)

A fish sold in the dried state at the Calcutta market.

Terminalia Arjuna.

Vern.—*Bengali*, Arjun; *Hindi*, Káhu; *Tamil*, Vella-marda; *Telugu*, Yermaddi; *Burmese*, Toukkyan.

Medicine.

A large deciduous tree, found in the Sub-Himalayan tracts, Bengal, Burma, Central and South India. The bark is astringent and febrifuge; the fruit tonic and deobstruent; the juice of the fresh leaves is a remedy for earache. In native medicine, the bark is largely used in heart diseases, contusions, ulcers, &c. It is also employed in tanning leather. The tree yields a brown transparent gum. The wood is used for making agricultural implements and for building purposes.

Tan.
Gum.
Timber.

Terminalia belerica. *The Beleric Myrabolan.*

Vern.—*Bengali*, Bahera; *Dakhini*, Balra; *Tamil*, Taurik-kay; *Telugu*, Tandra-kaya; *Burmese*, Thitsein.

Dye.
Medicine.

A large deciduous tree, found in the forests of India and Burma. The astringent fruit is one of the myrabolams of commerce, used in dyeing cloth and tanning leather. It is exported to Europe. Medicinally it is an astringent tonic in small doses, in large doses purgative; considered useful in dropsy, piles, diarrhoea, and leprosy. The kernel of the fruit is said to act as a narcotic poison, and produces intoxication if taken in a large dose; and an oil obtained from it is used for the hair. The tree yields large quantities of gum, which is not much used.

Oil.
Gum.

Terminalia Catappa. *The Indian Almond.*

Vern.—*Bengali*, *Hindi*, Bádám; *Tamil*, Natvadam; *Telugu*, Vadam.

Fruit.
Dye.

A large deciduous tree, cultivated in many parts of India and Burma for its nuts, the kernel of which is eaten; the bark and the leaves are astringent and mixed with iron salts yield a black pigment. The kernels

give about 50 per cent. of an oil, which may be substituted for almond oil. Oil. Tasar silk-worm feeds on the leaves.

Terminalia Chebula. *Chebulic* or *Black Myrabolam.*

Vern.—*Bengali*, Haritaki; *Hindi*, Harra; *Dakhini*, Halda; *Tamil*, Kadukkay; *Telugu*, Karak-kaya; *Burmese*, Panga.

A large, deciduous tree of the Sub-Himalyan regions, Eastern Bengal, Assam, Central and Southern India. The tree is very valuable for its fruit, known as the black myrabolam of commerce, which is one of the bests tanning agents in India. Mr. Gamble states :— Tan.

“They are largely exported from Bombay to Europe. So valuable is this trade in the Southern Circle of Bombay, that the Forest Department of that Circle clear annually at least Rs. 50,000 (£5,000) clear profit from it alone. In 1877-78 the net profit was Rs. 77,000; in future years it is expected to average a lakh (£10,000). The unripe fruit is used in tanning, dyeing, and in medicine. The fruits give with alum a yellow dye, and with iron-clay give a good sort of ink. Astringent galls form on the young twigs, which are also used for ink and in dyeing and tanning. The kernel gives a transparent oil.” Dye. Oil.

The value of myrabolam has of late been greatly appreciated in Australia, and since the Melbourne Exhibition large quantities of it have been exported to that country. The galls formed on the tender leaves by punctures made by an insect are as good as oak-galls in the manufacture of ink. Mixed with alum they give a yellow dye, and with ferruginous clay a permanent black colour. In medicine the fruit is used as a powerful astringent in ophthalmia and to purify blood; in large doses it is purgative. An infusion of the fruits of *T. Chebula*, *T. belerica*, and *Phyllanthus Emblica* taken every morning is said to improve the general health by regulating the action of the liver. Two kinds of *T. Chebula* fruits are sold in the market, one large and the other small, called *Jangi-har*; the latter is used in medicine only. A sweet conserve is made of the bigger fruits. The wood is durable, takes a good polish, and is used for building purposes, agricultural implements, and cabinet-work. The exports of myrabolams during the five years ending 1880-81 were as follows— Medicine. Fruit. Timber.

	Cwts.	£
1876-77	361,217	135,822
1877-78	537,055	230,526
1878-79	541,346	234,574
1879-80	354,977	158,081
1880-81	315,628	123,708

Terminalia tomentosa.

Vern.—*Bengali*, *Hindi*, Asan, Piyasal; *Tamil*, Karra-marda; *Telugu*, Maddi; *Burmese*, Touk-kyan.

A large deciduous tree of the Sub-Himalayan tract, Bengal, Burma, Central and Southern India. The bark is used in tanning, and also Dye.

Gum. in producing a black dye; the ashes of the bark are made into a sort of lime which are eaten by the natives with betel leaf. The tree yields a gum; the fruit is edible, and is said to be a kind of myrabolan. The Tasar silk-worm feeds on the leaves. The wood is largely used for building purposes and for agricultural implements.

Timber.

Tetranthera monopetala.

Vern.—Bengali, *Hindi*, Mayda-lakri; *Telugu*, Nara-chettu.

Medicine. A moderate-sized evergreen tree, found nearly all over India; the bark is considered stimulant, and is also made into plaster for contusions.

Textile fabrics.

Chintzes. Of the samples sent under this head the most important are the cotton chintzes of Lucknow, Farukhabad, Aligarh, Jaipur, &c. These have of late attracted much attention. The printing is done by the hand with a simple wooden stamp.

Phulkaris. The *phulkaris* are embroideries on cotton cloth, done by the peasant women of the Punjab in their leisure hours. Mr. Kipling states that "from a decorative point of view, these fabrics are exceedingly interesting. With the simplest materials and with rigidly conventional ornament, the effect produced is often most pleasing and artistic." At the Melbourne Exhibition the *phulkaris* sold readily, and were very much admired.

Shawls. The principal seat of shawl manufacture, besides Kashmir, is Amritsar and Ludhiana in the Punjab. The peculiar soft quality of the wool and the delicacy of the manipulative process, in which no machinery is employed, together with the rich and harmonious colouring of the patterns, have secured a world-wide reputation for these goods.

Thespesia populnea. *Portia* or *Tulip Tree*.

Vern.—Bengali, Pares-h-pippul; *Hindi*, Parsipu; *Tamil*, Poris; *Telugu*, Gangarcu-chettu.

Medicine. A moderate-sized evergreen tree, planted throughout India, and found wild in the coast forests. The fruit contains a yellow juice, applied to itches and other cutaneous affections. The bark yields a good fibre, and a yellow dye is obtained from the capsules.

Fibre.

Dye.

Tiaridium indicum. *Indian Turnsole*.

Vern.—Bengali, Hathi-suro; *Tamil*, Tel-kodudu; *Telugu*, Tal-meni.

Medicine. An annual, found in moist places in Bengal and South India. It is considered a good remedy for carache.

Timber. See "Classified List."

Tincture cardamom, ferri perchlor. and senna.

Medicine. These are manufactured by a native firm of Calcutta, the Peacock

Chemical Works, and are cheaper than European-manufactured tinctures. The exhibitor, Babu Sirish Chandra Datta, is anxious to know whether his tinctures have any chance of finding a market in Europe. This is the only native firm which has wholesale dealings in tinctures and deserves encouragement.

Tobacco. See *Nicotiana rustica*.

Toke. See Fishing Implements.

Tomato.

Vern.—*Hindi*, Vilayati-baigun.

Tomato or Love-apple (*Lycopersicum esculentum*) is a vegetable culti- Fruit.
vated in the gardens of Europeans. It is not liked by the natives. A sample of tomato sauce has been sent by Messrs. Cursetjee & Sons, of Ahmadnagar, Bombay.

Tonk sub-acid fruit. (Unidentified)

This cucumber-like edible fruit, with a sub-acid pulp, was sent to the Fruit.
Jaipur Exhibition, from which the sample has been procured. Name not known.

Tooth-powder, Aromatic.

Sample contributed by Messrs. Paul & Co., a native firm of Calcutta. Medicine.
The tooth-powder has obtained a good reputation. The exhibitors are anxious to have a fair trial of their article. It is made of vegetable substances purely Indian.

Tragia involucrata.

Vern.—*Bengali*, Bichuti; *Tamil*, Kanchuri; *Telugu*, Dulaghondi.

A common stinging weed found in dry places. The root is used as an Medicine.
alterative in special diseases.

Trapa bispinosa. *Water Caltrop.*

Syn.—*Trapa natans*.

Vern.—*Bengali*, Pániphal; *Hindi*, Singhera; *Telugu*, Parikegadda.

Largely cultivated in shallow tanks in Upper India for its fruit, which comes in season in the cold season and forms an important article of food Food.
of the poorer classes. In Kashmir, miles of the lakes and marshes are covered with it, and the fruit forms the staple food, for some months of the year, to a large number of people. It abounds in starch, resembles a chestnut in flavour, and is eaten either raw or cooked. Flour is made of it, which is eaten by Hindus on fast-days, and also made into sweetmeats. It is a good invalid diet.

Trichosanthes anguina. *Common Snake-gourd.*

Vern.—Bengali, Chichinga; Hindi, Chichindā.

Food.
Medicine.

Cultivated in many parts of India for its greenish long gourd, which is eaten cooked. The seeds are reckoned a cooling medicine.

Trichosanthes dioica.

Vern.—Bengali, Patal; Hindi, Parwal.

Vegetable.

Spice.
Medicine.

Fruit.

Cultivated in Bengal and some parts of North-Western Provinces for its fruit, which, in the green state, is used as a vegetable. The tender tops, called *Patta*, which are bitterish in taste, are used as a pot-herb and also as a condiment. The leaves in decoction with coriander seed are considered an agreeably bitter tonic, given in bilious and chronic fevers; the juice of the green fruit is considered cooling and laxative; the roots are purgative. The fruit is sometimes preserved in sugar.

Trigonella Fœnum-græcum. *Fenugreek Seeds.*

Vern.—Bengali, Hindi, Methi; Tamil, Vendaynam; Telugu, Mentulu.

Spice.
Medicine.
Perfume.

Dye.

Cultivated in many parts of India. The plant is eaten as a vegetable, and the seeds are largely used as a condiment. In medicine they are considered useful as a tonic, demulcent, and vermifuge. The small variety, called *chhota methi*, is used as a hair perfume. Mr. Baden-Powell states that the seeds are used as coffee after roasting, and that they form a yellow dye.

Triticum vulgare. *Wheat.*

Vern.—Sanskrit, Godhum; Bengali, Gam; Hindi, Gehun; Tamil, Gadumai; Telugu, Godu-mulu.

Food.

Largely cultivated in North-Western Provinces, Punjab, Central Provinces and Bombay, and is the staple food of the upper classes of the people in these parts of India, the poorer classes living on barley, maize, and millets. There are many varieties of wheat, of which the soft white of Jabalpur, called *ekdana*; the soft white of Muzaffarnagar, known as Delhi wheat; the soft white of Cawnpore, called *dudhia*; the hard white of Bundelkhand, called *kathia*; and the *mundipisi*, *sufedpisi*, *lalpisi*, *jalalia*, *dāudi*, *kathia*, &c., of Narsingpur and other places, are well known in commerce. In the Calcutta market the commercial names of the two best wheats are Club No. 1 of Delhi and Club No. 2 of Cawnpore. After a careful trial, experts have come to the conclusion that the best varieties of Indian wheat are not at all inferior to the best varieties of other countries. The value of Indian wheat has of late years been appreciated in

Europe, and the trade is rapidly increasing, as the exports during the five years ending 1880-81 will show :—

	Cwts.	£
1876-77	5,583,336	1,956,332
1877-78	6,340,150	2,856,989
1878-79	1,044,209	513,778
1879-80	2,195,550	1,121,014
1880-81	7,444,375	3,277,941

See also "Food-crops."

Tsainlain. See Fishing Implements.

Tsoug. See Fishing Implements.

Typha elephantina. *Elephant Grass.*

Vern.—Bengali, Hogla; Punjabi, Pan.

A kind of bulrush which grows on river banks and margins of tanks. Rough mats are made of it, which in South Bengal are largely used by the poorer classes.

U

Ulmus Wallichiana.

Vern.—Punjabi, Kain, Bren, &c.; Hindi, Mored, Pabúna, &c.

- A large deciduous tree of the North-Western Himalayas. The wood is Timber. used for building purposes. Mr Gamble is of opinion that it deserves more attention. A strong cordage is made of the bark. The leaves are Fibre.
- used for cattle fodder.

Ulu (*Imperata cylindricum*).

A grass largely used for thatching purposes in Bengal. It is suitable Fibre. for the manufacture of paper.

Uncaria Gambier. *Japan Earth.*

Vern.—Telugu, Ukadi.

A native of the Eastern Archipelago. The leaves yield the extract gambier of commerce, which is used in tanning like catechu.

[N. B.—It is doubtful whether the sample sent to Amsterdam was not misidentified. It was probably the bark of *Gmelina arborea* that was sent, which is used in medicine as a tonic and stomachic. The vernacular name of this plant is *Gāmbhāṭ*, hence probably the mistake.]

Medicine.

Urceola esculenta and elastica. See Caoutchouc.

Urepa hemp. (Unidentified.)

A sample of this fibre has been received from Burma.

Fibre.

Uri grass. *Wild Rice.*Food.
Fodder.

Found in the marshes of India. The grain is collected by the poorer classes for food. It is very fine, but a little bitterish in taste; straw used as a fodder.

Uvee passoe. *Raisin.* See *Vitis vinifera*.

V

Valeriana Hardwickii.Vern.—*Hindi*, Bála, Char-godar.

Medicine.

A plant of the Himalayas; roots brought to the plains, and used as an aromatic stimulant and antispasmodic in hysteria, epilepsy, hypochondriasis, &c.

Vallai indu. (Unidentified.)

Fibre.

A fibre, sample of which has been received from the Madras Forest Department.

Valukkai. (Unidentified.)

Fibre.

A fibre, sample received from the Madras Forest Department.

Vateria indica. *The Piney Varnish or Indian Copal Tree; White Dammer.*Syn.—*Vateria malabarica*.Vern.—*Tamil*, Piney-maram, Dhúp-maram, Vallai-kunrikhan; *Telugu*, Dupada, Tella-damaru.Gum.
Medicine.

A large evergreen tree of South India. An excellent varnish, resembling copal, is obtained from this tree. Dr. Bidie states that, with gentle heat, the dammer combines with water and oil, and forms an excellent ointment, which may be used as a resinous ointment.

Vateria malabarica. Syn. of *Vateria indica*.**Ventilago maderaspatana.**Vern.—*Bengali*, Raktapitta; *Tamil*, Papli; *Telugu*, Yerrachikatli.Fibre.
Dye.
Gum.

A large climbing shrub of Central and Southern India and Burma. The bark is made into cordage; the root yields a red dye, and is also used in medicine; the tree is said to yield a gum. Dr. Bidie states:—

“The bark is used along with Chay root (*Oldenlandia umbellata*) to produce a chocolate colour, often seen on the borders of native cloths in Mysor, Bellary, Haidarabad, &c. If galls be added, it is said to yield a black colour. The collection of the dye at certain times of the year yields occupation to a large number of people in Western Mysor, where the plant is abundant.”

Verdigris. *Subacetate of Copper.*

Vern.—*Hindi*, Zangár; *Tamil*, Vungalap-patchei; *Telugu*, Zenghali-patse.

Manufactured in the country. It is of a beautiful bluish-green colour, Dye, much used in painting and dyeing.

Vernonia anthelmintica. *Purple Flea-bane.*

Syn.—*Conyza anthelmintica.*

Vern.—*Bengali*, Somraj; *Hindi*, Kali-jiri; *Tamil*, Kattu-shuagam; *Telugu*, Adavi-jilakara.

The plant is found wild in moist localities. The seeds are powerfully anthelmintic and also diuretic; considered a valuable medicine for leprosy, and also given in infusion in coughs and flatulency. Powdered and mixed with lime-juice, they are employed to destroy parasites among the hair; and, mixed with oil, used in scabies and anasarca, and also as plasters for abscesses. Medicine.

Vicia Faba, formerly called *Faba vulgaris*, which see.

Vigna Catiang.

Syn.—*Dolichos Catiang*, D. sinensis.

Vern.—*Bengali*, Barbati; *Hindi*, Lobiya, Raish. •

• Cultivated in Bengal, North-Western Provinces, and other parts of India. The green pods are used as a vegetable; the seeds are eaten cooked like other pulses. Food.

Viola sp. (serpens ?).

Vern.—*Hindi*, Banafshá.

A small plant, found in the Himalayas. The flowers and leaves are used by Muhammadan doctors as a diaphoretic, an aromatic and laxative, largely prescribed in slow fevers; the seeds are also considered diuretic; the roots emetic, resembling ipecacuanha in action, and also purgative. Medicine.

Fitex Negundo. *Five-leaved Chaste Tree.*

Vern.—*Hindi*, Mirgandi; *Tamil*, Vellainochi-elai; *Telugu*, Tella-vavili-aku.

A deciduous shrub, common in the drier parts of India. The leaves are used in acute rheumatism, intermittent fever, and special diseases; the dried leaves are smoked to relieve headache and catarrh; heated and applied externally as a discutient on swellings of joints, &c. The root and fruit possess anodyne, diuretic, and emenagogueic properties. Medicine.

Fitex trifolia. *Indian Prenet.* •

Vern.—*Bengali*, Nishinda; *Hindi*, Sambhalu; *Tamil*, Nirnochi; *Telugu*, Vavili; *Burmese*, Kyoung-ban.

• A shrub or small tree of Bengal, South India, and Burma. The leaves

and flowers are agreeably heavy-scented ; the former are considered useful in special diseases and after parturition, and also in cutaneous diseases. They are said to regulate the bile and increase the appetite ; also applied externally in enlarged spleen, contusions, sprains, and rheumatism.

In native medicine, *V. Negundo* and *V. trifolia* are usually used indiscriminately ; the plants are alike : *V. Negundo* has blue flowers, and *V. trifolia* has pale-blue flowers.

***Vitis vinifera* and sp. Raisins.**

Vern.—*Bengali, Hindi, Kishmish.*

Grapes are now cultivated in many parts of India, specially in the Punjab hills to the west of the Indus. Many new varieties have of late been introduced. Raisins are chiefly brought from Kabul. Two varieties are sold in the market, one large, called *Munakka*, with seeds ; and the other small, without seeds. Raisins are largely used in native medicine, and are considered cool and aperient, given in coughs, catarrh, and jaundice.

W

***Willoughbeia edulis.* See Caoutchouc.**

***Withania somnifera.* Winter Cherry.**

Syn.—*Physalis somnifera.*

Vern.—*Bengali, Aswagandha ; Hindi, Asgand ; Dakhini, Nat-ki-asgand ; Tamil, Amuk-kura-virai ; Telugu, Bunera-gadda-vittulu.*

A small shrub, found in all parts of India. The leaves are bitter and narcotic, given in fever and special diseases. The long, white root, which smells like a horse,—hence the Bengali name *Aswagandha*, or *horse-smelling*,—is considered diuretic and deobstruent, and also a sedative ; useful in special diseases. The root and the leaves made into pulp are used as an external application to boils and swellings. The seeds coagulate milk. Dr. Bidie states that the medicinal virtues of the plant deserve further investigation.

Woodfordia floribunda.

Syn.—*Grislea tomentosa.*

Vern.—*Bengali, Dhái ; Hindi, Dhá, Dhaora ; Dakhini, Phul-satti ; Telugu, Jargi.*

A large shrub, common throughout India. The tree is valuable for its flowers, which yield a red dye used in colouring cotton, silk, and leather. The leaves and the twigs are used in dyeing yellow. About 27 tons of the flowers are annually exported from the Kumaun hills. The Dhái flower deserves the attention of European dyers. In medicine the dried flowers are prescribed as an astringent tonic in the disorders of the mucus membranes, hæmorrhoids, and in derangements of the liver ; and are also considered a safe stimulant in pregnancy. The leaves are also *official*.

Wool.

The wool produced or used in India may be divided into three classes: (1) Kashmir Pashm, which is produced in Kashmir and also brought from Central India. It is a downy substance, growing next to the skin under the thick hair of the Tibetan goat. This is the real shawl wool. (2) Wool produced in Kabul, Bokhara, Persia, &c. It is largely exported to Europe *via* Karachi and Bombay. (3) Wool of the plains. This is generally of an inferior quality, fit for making blankets. There is much room for improvement in the Indian wool, but as yet no earnest endeavours have been made in this direction. Mills for the manufacture of woollen cloths are now being established by European capitalists, and it is hoped that the improvement required will now gradually be accomplished. The samples of wool sent to Amsterdam have been collected by Mr. J. L. Kipling, Principal, Art School, Lahore.

Wrightia tinctoria.*

Vern.—*Bengali*, Indrajau; *Hindi*, Dudhi; *Tamil*, Pálá, Vepále; *Telugu*, Tedlapál.

A small deciduous tree, found in Rajputana, Central and South India. Dye. The leaves yield an inferior sort of indigo blue and are used in dyeing. Timber. The wood is valuable, used for carving and turning. In medicine the seeds are used as an anthelmintic. Medicine.

*Wrightia zeylanica. Kurchi; Conessi.

Syn.—*W. antidysenterica*.

Vern.—*Bengali*, Kúrchí.

The bark is a very valuable remedy for dysentery. It was formerly exported to Europe, but, owing to admixture of the bark of *Wrightia tinctoria*, which does not possess medicinal virtues, the trade has declined. Babu Ranga Lal Mukharji, of Birbhum, states that he can supply the pure article at 10 s. per cwt. Five bags of pure bark were sent to Amsterdam.

X

Xanthium strumarium.

Vern.—*Hindi*, Chhotta-Gokhru (?)

Dr. Balfour states "that this plant was formerly used in European medicine, and that its thorns and prickles are still employed in India and China. Mr. Baden-Powell says that the root is a bitter tonic, useful in cancer, and strumous diseases. Its seeds yield an oil used for lamps; they are also used for food in famine times. Medicine. Oil. Food.

Y

Yellow arsenic. *See* Arsenic.

Yatthet.

Yaybanwin.

Yeik.

Yindbon.

Yingwai.

See Fishing Implements.

Z.

Zanthoxylum alatum. *Pepper-wort.*

Vern.—*Hindi*, Tejbal, Timura.

Medicine.

A small tree of the outer Himalayas and the Khasia Hills. The whole plant has a disagreeable smell. The prickly stems are made into sticks which are supposed to possess medicinal virtues; the small branchlets are used as tooth-brushes, and the thorns as a remedy for toothache; bark and the seeds prescribed as a tonic in fevers and disorders of the bowels, fruit used as a remedy for toothache, also deemed stomachic and carminative, and also employed to intoxicate fish.

Zanthoxylum hostile. Described in Mr. Baden-Powell's "Punjab Products;" seems to be the same as *Z. alatum*.

Zea Mays. *Maize or Indian Corn.*

Vern.—*Bengali*, Janár; *Hindi*, Bhuttá, Makká; *Dakhiní*, Makha-Jowári; *Tamil*, Makka Cholum; *Telugu*, Makkazonalu.

Food.

Largely cultivated in Upper India and the Himalayas, where it is an important article of food of the poorer classes. It is eaten roasted in cobs when green, or the seed is ground into flour and made into cakes. It is considered nutritious, containing 6 to 7 per cent. of a yellowish fat. Its chemical composition has been ascertained to be—nitrogenous ingredients, 14.66 per cent.; non-nitrogenous ingredients, 84.52; inorganic ingredients, 1.92. Many new varieties of maize have of late been introduced into the country, among which may be mentioned the Cuzco in the hills, and the Canada, Tuscara, Golden Dent, White Flint, and Pennsylvania Yellow in the plains. Excellent samples of the four last varieties have been received from Ajmir. Of country varieties the Jaunpur maize has a good reputation.

Zingiber officinale. Ginger.

Vern.—*Bengali*, Ada, Sunt ; *Hindi*, Adrak, Sont ; *Tamil*, Shukku ; *Telugu*, Sonti.

Ginger is cultivated in many parts of India for its root, which is used as a condiment as well as in medicine. The dried roots are usually sold in the market. Ginger possesses acrid, heating, and carminative properties, and is prescribed in bronchial and pulmonary affections, rheumatism, dropsy, &c. The juice of fresh ginger is laxative. It is also preserved in sugar.

Spice.
Medicine.

Zizyphus Jujuba. Jujube.

Vern.—*Bengali*, Kúl ; *Hindi*, Ber, Unáb ; *Tamil*, Elandap-pazham ; *Telugu*, Regu-pandu ; *Burmese*, Ziben.

A moderate-sized tree, cultivated throughout India and Burma for its fruit, which is eaten raw or preserved by drying. It is considered nourishing, mawkish, mucilaginous, pectoral and styptic, and as a blood-purifying agent. The bark contains much tannic acid and is given in diarrhoea ; root used in decoction in fever and applied externally to ulcers ; the leaves are made into plaster for strangury and other diseases. The wood is used for agricultural implements, &c.

Fruit.
Medicine.
Timber.

Zizyphus rugosa.

• **Vern.**—*Dakhini*, Rambir ; *Tamil*, Karukuva ; *Telugu*, Kaki-pala.

A moderate-sized tree of South India. A gum resembling kino is obtained from the tree, of which a sample has been received from the Madras Forest Department.

Gum.

Zizyphus xylopyrus.

Vern.—*Hindi*, Ghont ; *Telugu*, Goti.

A large scrambling shrub, found in the Sub-Himalayan tract, Central and Southern India. Mr. Gamble states that the wood is used for agricultural implements ; shoots and leaves for fodder ; bark for tanning leather ; fruit not edible, but imparts a black colour to leather.

Timber.
Dye.

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